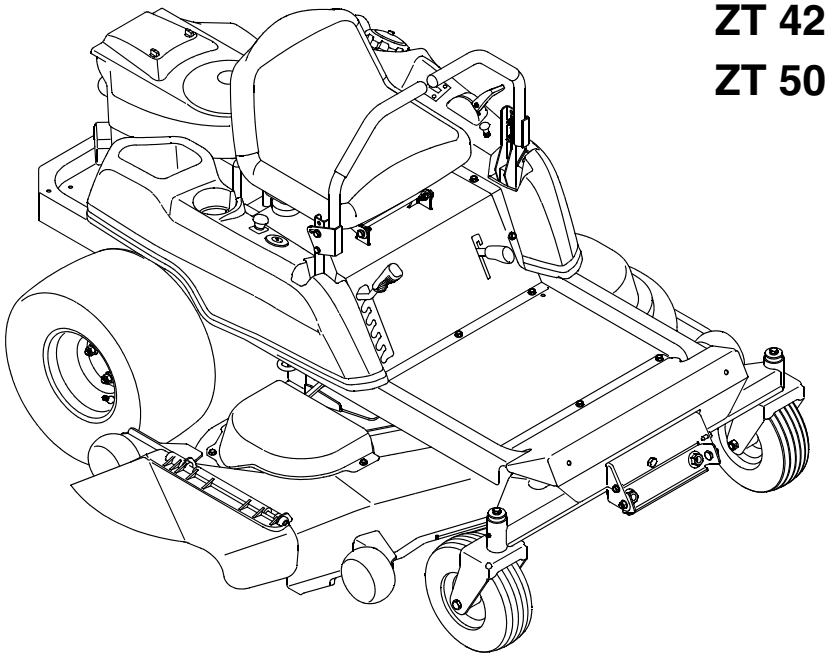
White OUTDOOR®

OPERATOR'S MANUAL

ZERO TURN TRACTOR
Model Numbers
ZT 42 w/42" Mower Deck
ZT 50 w/50" Mower Deck



IMPORTANT: READ SAFETY RULES AND INSTRUCTIONS CAREFULLY

Warning: This unit is equipped with an internal combustion engine and should not be used on or near any unimproved forest-covered, brush-covered or grass-covered land unless the engine's exhaust system is equipped with a spark arrester meeting applicable local or state laws (if any). If a spark arrester is used, it should be maintained in effective working order by the operator. In the State of California the above is required by law (Section 4442 of the California Public Resources Code). Other states may have similar laws. Federal laws apply on federal lands. A spark arrester for the muffler is available through your nearest engine authorized service dealer or contact the service department, P.O. Box 361131 Cleveland, Ohio 44136-0019.

MTD LLC, P.O. BOX 361131 CLEVELAND, OHIO 44136-0019

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TRACTOR PREPARATION

Remove the upper crating material from the shipping pallet, and cut any bands or tie straps securing the tractor to the pallet. Use the lift handle to raise the deck to its highest position; engage the transmission bypass rods (Refer to SECTION 1, CONTROLS AND FEATURES); and carefully roll the tractor off the shipping palltet. Disengage the bypass rods.

CONNECT THE BATTERY

WARNING

Battery posts, terminals and related accessories contain lead and lead compounds. **Wash hands after handling**.

The tractor is shipped with an activated sealed battery, with the positive battery cable factory connected. The negative cable must be connected.

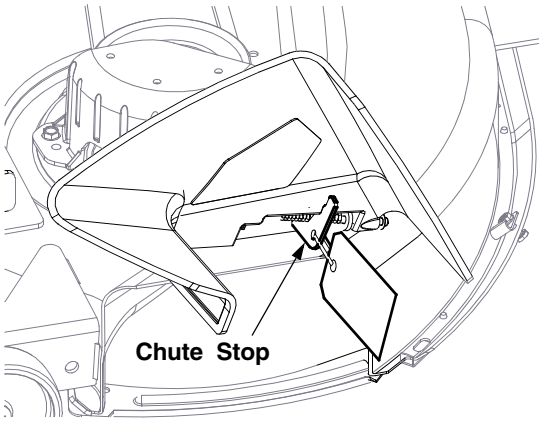
Note: *Make sure the ignition switch is in the "OFF" position before attaching the battery cable.*

1. Pull the protective cap off the negative terminal of the battery, and remove the hex cap screw and nut from the free end of the negative battery cable.
2. Connect the negative battery cable (heavy black) to negative terminal (NEG) of the battery using the hex cap screw and nut. Slide the black terminal cover over the negative terminal of the battery.

MODEL ZT42 ONLY

Remove The Chute Stop

- Locate the chute stop on the right side of the mower, between discharge chute and cutting deck.
- While holding the discharge chute up, rotate the chute stop clockwise and remove.
- Discard the chute stop.



WARNING

- The engine exhaust, some of its constituents, and certain vehicle components contain or emit chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.
- This unit is equipped with an internal combustion engine and should not be used on or near any unimproved forest-covered, brush-covered, or grass-covered land unless the engine's exhaust system is equipped with a spark arrester meeting applicable local or state laws (if any). If a spark arrester is used, it should be maintained in effective working order by the operator.
- In the State of California, the above is required by law (Section 4442 of the California Public Resources Code). Other States may have similar laws. Federal laws apply to federal lands. A spark arrester muffler is available at your nearest engine authorized service center.

IMPORTANT

SAFE OPERATION PRACTICES

THIS SYMBOL POINTS OUT IMPORTANT SAFETY INSTRUCTIONS WHICH, IF NOT FOLLOWED, COULD ENDANGER THE PERSONAL SAFETY AND/OR PROPERTY OF YOURSELF AND OTHERS. READ AND FOLLOW ALL INSTRUCTIONS IN THIS MANUAL BEFORE ATTEMPTING TO OPERATE YOUR UNIT. FAILURE TO COMPLY WITH THESE INSTRUCTIONS MAY RESULT IN PERSONAL INJURY. WHEN YOU SEE THIS SYMBOL— **HEED ITS WARNING**.

DANGER Your lawn mower was built to be operated according to the rules for safe operation in this manual. As with any type of power equipment, carelessness or error on the part of the operator can result in injury. This lawn mower is capable of amputating hands and feet or throwing objects. Failure to observe the following safety instructions could result in serious injury or death.

I. GENERAL OPERATION

1. Read, understand and follow all instructions in the manual and on the machine before starting. Keep this manual in a safe place for future and regular reference.
2. Only allow responsible individuals familiar with the instructions to operate the machine. Know the controls and how to stop the machine quickly.
3. Do not put hands or feet under the cutting deck or near rotating parts.
4. Clear the area of objects such as rocks, toys, wire, etc. which could be picked up and thrown by the blades. A small object may have been overlooked and could be accidentally thrown by the mower in any direction and cause injury to you or a bystander. To help avoid a thrown objects injury, keep children, animals, bystanders and helpers at least 75 feet from the mower while it is in operation. Always wear safety glasses with side shields or safety goggles during operation or while performing an adjustment or repair, to protect eyes from foreign objects. Stop the blades when crossing gravel drives, walks or roads.
5. Be sure the area is clear of other people before mowing. Stop machine if anyone enters the area.
6. Never carry passengers.
7. Disengage the blades before shifting into reverse and backing up. Always look down and behind before and while backing.
8. Be aware of the mower and attachment discharge direction and do not point it at anyone. Do not operate the mower without either the entire grass catcher or the chute guard in place.
9. Slow down before turning. Operate the machine smoothly. Avoid erratic operation and excessive speed.
10. Never leave a running machine unattended. Always turn off the blades, place the transmission in neutral, set the parking brake, stop the engine and remove key before dismounting.
11. Turn off blades when not mowing.
12. Stop the engine and wait until the blades come to a complete stop before (a) removing the grass catcher or unclogging chute, or (b) making any repairs, adjusting or removing any grass or debris.

13. Mow only in daylight or good artificial light.
14. Do not operate the machine while under the influence of alcohol or drugs.
15. Watch for traffic when operating near or crossing roadways.
16. Use extra care when loading or unloading the machine into a trailer or truck. This unit should not be driven up or down a ramp onto a trailer or truck under power, because the unit could tip over causing serious personal injury. The unit must be pushed manually on a ramp to load or unload properly.
17. Never make a cutting height adjustment while the engine is running if the operator must dismount to do so.
18. Wear sturdy, rough-soled work shoes and close-fitting slacks and shirts. Do not wear loose fitting clothes or jewelry. They can be caught in moving parts. Never operate a unit in bare feet, sandals or sneakers.
19. Check overhead clearance carefully before driving under power lines, wires, bridges or low hanging tree branches, before entering or leaving buildings, or in any other situation where the operator may be struck or pulled from the unit, which could result in serious injury.
20. Disengage all attachment clutches, set the parking brake in the on position, and put the lap bars to the neutral or out position before attempting to start the engine.
21. Your mower is designed to cut normal residential grass of a height no more than 10". Do not attempt to mow through unusually tall, dry grass (e.g. pasture) or piles of dry leaves. Debris may build up on the mower deck or contact the engine exhaust presenting a potential fire hazard.
22. Use only accessories approved for this machine by *White Outdoor*. Read, understand and follow all instructions provided with the approved accessory.

⚠ II. SLOPE OPERATION

Slopes are a major factor related to loss of control and tip-over accidents, which can result in severe injury or death. **All** slopes require extra caution. If you cannot back up the slope or if you feel uneasy on it, do not mow it.

For your safety, use the slope gauge included as part of this manual to measure slopes before operating this unit on a sloped or hilly area. If the slope is greater than 15° as shown on the slope gauge, do not operate this unit on that area or serious injury could result.

DO:

Mow across slopes, not up and down.

Remove obstacles such as rocks, limbs, etc.

Watch for holes, ruts or bumps. Uneven terrain could overturn the machine. **Tall grass can hide obstacles.**

Use slow speed. Choose a low enough speed so that you will not have to stop while on the slope.

Follow the manufacturer's recommendations for counterweights with attachments to improve stability.

Use extra care with grass catchers or other attachments. These can change the stability of the machine.

Keep all movement on the slopes **slow** and **gradual**. Do not make sudden changes in speed or direction. Rapid acceleration or deceleration could cause the front of the machine to lift and rapidly flip over backwards, which could cause serious injury.

Avoid starting or stopping on a slope. If the tires lose traction, disengage the blades and proceed slowly **straight** down the slope.

DO NOT:

Do not turn on slopes unless necessary; if mowing slopes, turn slowly and gradually uphill, if possible.

Do not mow near drop-offs, ditches or embankments. The mower could suddenly turn over if a wheel is over the edge of a cliff or ditch, or if an edge caves in.

Do not mow on wet grass. Reduced traction could cause sliding.

Do not try to stabilize the machine by putting your foot on the ground.

Do not use the grass catcher on steep slopes.

⚠ III. CHILDREN

Tragic accidents can occur if the operator is not alert to the presence of children. Children are often attracted to the machine and the mowing activity. **Never** assume that children will remain where you last saw them.

1. Keep children out of the mowing area and in watchful care of an adult other than the operator.
2. Be alert and turn the machine off if children enter the area.
3. Before and when backing up, look behind and **down** for small children.
4. Never carry children, even with the blades off. They may fall off and be seriously injured or may interfere with safe machine operation.

5. Never allow children under 14 years old to operate the machine. Children 14 years and over should only operate the machine under close parental supervision and proper instruction.
6. Use extra care when approaching blind corners, shrubs, trees or other objects that may obscure your vision of a child or other hazard.
7. Remove the key when the machine is left unattended to prevent unauthorized operation.

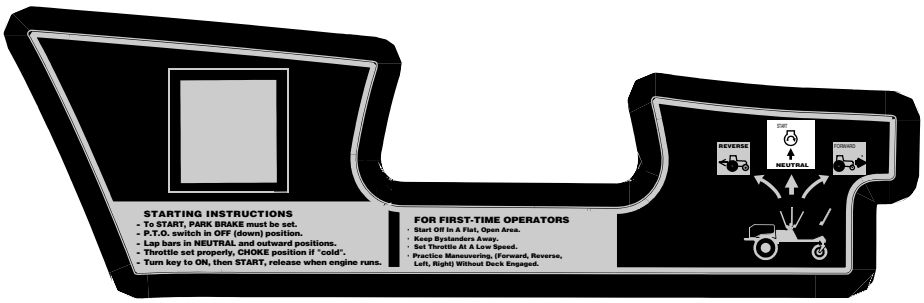
IV. SERVICE

1. Use extreme care in handling gasoline and other fuels. They are extremely flammable and the vapors are explosive.
   a. Use only an approved container.
   b. Never remove fuel cap or add fuel with the engine running. Allow the engine to cool at least two minutes before refueling.
   c. Replace the fuel cap securely and wipe off any spilled fuel before starting the engine as it may cause a fire or explosion.
   d. Extinguish all cigarettes, cigars, pipes and other sources of ignition.
   e. Never refuel the machine indoors because fuel vapors will accumulate in the area.
   f. Never store the fuel container or machine inside where there is an open flame or spark, such as a gas hot water heater, space heater or furnace.
2. Never run a machine inside a closed area.
3. To reduce fire hazard, keep the machine free of grass, leaves or other debris build-up. Clean up oil or fuel spillage. Allow the machine to cool at least 5 minutes before storing.
4. Before cleaning, repairing or inspecting, make certain the blade and all moving parts have stopped. Disconnect the spark plug wire, and keep the wire away from the spark plug to prevent accidental starting.
5. Check the blade and engine mounting bolts at frequent intervals for proper tightness. Also visually inspect blades for damage (e.g., excessive wear, bent, cracked). Replace with blades which meet original equipment specifications.
6. Keep all nuts, bolts and screws tight to be sure the equipment is in safe working condition.
7. Never tamper with safety devices. Check their proper operation regularly. Use all guards as instructed in this manual.
8. After striking a foreign object, stop the engine, remove the wire from the spark plug and thoroughly inspect the mower for any damage. Repair the damage before restarting and operating the mower.
9. Grass catcher components are subject to wear, damage and deterioration, which could expose moving parts or allow objects to be thrown. For your safety protection, frequently check the components and replace with manufacturer's recommended parts when necessary.
10. Mower blades are sharp and can cut. Wrap the blades or wear gloves, and use extra caution when servicing blades.
11. Check the park brake operation frequently. Adjust and service as required.
12. Muffler, engine and belt guards become hot during operation and can cause a burn. Allow to cool down before touching.
13. Do not change the engine governor settings or overspeed the engine. Excessive engine speeds are dangerous.
14. Observe proper disposal laws and regulations. Improper disposal of fluids and materials can harm the environment and the ecology.
    a. Prior to disposal, contact your local Environmental Protection Agency to determine the proper method for disposing of the waste. Recycling centers are established to properly dispose of materials in an environmentally safe fashion.
    b. Use proper containers when draining fluids. Do not use food or beverage containers that may mislead someone into drinking from them. Properly dispose of the containers immediately following the draining of fluids.
    c. DO NOT pour oil or other fluids into the ground, down a drain or into a stream, pond, lake, or other body of water. Observe Environmental Protection Agency regulations when disposing of oil, fuel, coolant, brake fluid, filters, batteries, tires and other harmful waste.
15. We do not recommend the use of a pressure washer or garden hose to clean your unit. They may cause damage to electrical components; spindles; pulleys; bearings; or the engine. The use of water will result in shortened life and reduce serviceability.

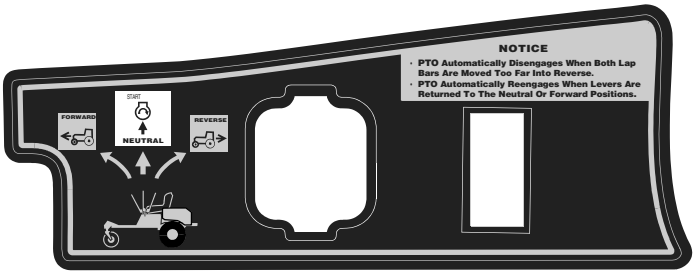
WARNING - YOUR RESPONSIBILITY: Restrict the use of this power machine to persons who read, understand and follow the warnings and instructions in this manual and on the machine.

SAFETY DECALS AND LABELS

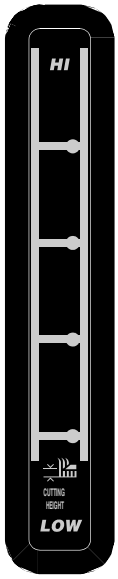
Keep product safety graphics (decals) clean. Replace any safety graphic that is damaged, destroyed, missing, painted over or can no longer be read. Replacement safety graphics are available through your dealer.


STARTING INSTRUCTIONS
- To START, PARK BRAKE must be set.
- P.T.O. switch in OFF (down) position.
- Lap bars in NEUTRAL and outward positions.
- Throttle set properly, CHOKE position if "cold".
- Turn key to ON, then START, release when engine runs.
FOR FIRST-TIME OPERATORS
· Start Off In A Flat, Open Area.
· Keep Bystanders Away.
· Set Throttle At A Low Speed.
· Practice Manuevering, (Forward, Reverse, Left, Right) Without Deck Engaged.
REVERSE
START
NEUTRAL
FORWARD

GENERAL SAFETY INSTRUCTIONS – LOCATED ON LEFT CONSOLE ASIDE OPERATOR'S SEAT


NOTICE
· PTO Automatically Disengages When Both Lap Bars Are Moved Too Far Into Reverse.
· PTO Automatically Reengages When Levers Are Returned To The Neutral Or Forward Positions.
FORWARD
START
NEUTRAL
REVERSE

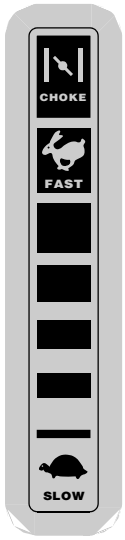
GENERAL OPERATING INSTRUCTIONS – LOCATED ON RIGHT CONSOLE ASIDE OPERATOR'S SEAT



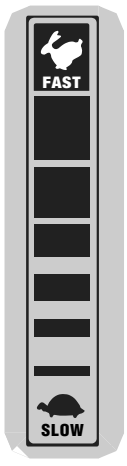
DECK HEIGHT INDICATOR – LOCATED ON RIGHT SIDE OF SEAT BOX FRAME

PARK BRAKE INDICATOR – LOCATED ON LEFT SIDE OF SEAT BOX FRAME

ZT42

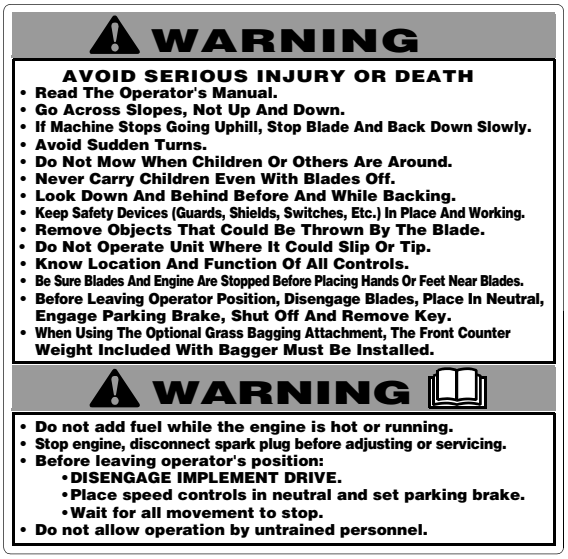


ZT50



THROTTLE CONTROL INDICATOR – LOCATED ON LEFT CONSOLE

SAFETY DECALS AND LABELS


WARNING
AVOID SERIOUS INJURY OR DEATH
• Read The Operator's Manual.
• Go Across Slopes, Not Up And Down.
• If Machine Stops Going Uphill, Stop Blade And Back Down Slowly.
• Avoid Sudden Turns.
• Do Not Mow When Children Or Others Are Around.
• Never Carry Children Even With Blades Off.
• Look Down And Behind Before And While Backing.
• Keep Safety Devices (Guards, Shields, Switches, Etc.) In Place And Working.
• Remove Objects That Could Be Thrown By The Blade.
• Do Not Operate Unit Where It Could Slip Or Tip.
• Know Location And Function Of All Controls.
• Be Sure Blades And Engine Are Stopped Before Placing Hands Or Feet Near Blades.
• Before Leaving Operator Position, Disengage Blades, Place In Neutral, Engage Parking Brake, Shut Off And Remove Key.
• When Using The Optional Grass Bagging Attachment, The Front Counter Weight Included With Bagger Must Be Installed.
WARNING
• Do not add fuel while the engine is hot or running.
• Stop engine, disconnect spark plug before adjusting or servicing.
• Before leaving operator's position:
• DISENGAGE IMPLEMENT DRIVE.
• Place speed controls in neutral and set parking brake.
• Wait for all movement to stop.
• Do not allow operation by untrained personnel.

GENERAL SAFETY INSTRUCTIONS WARNING – LOCATED IN CENTER OF SEAT BOX FRAME

TO REDUCE THE RISK OF INJURY, DO NOT OPERATE UNLESS DISCHARGE COVER OR GRASS CATCHER IS IN ITS PROPER PLACE. IF DAMAGED, REPLACE IMMEDIATELY.
DANGER
KEEP HANDS and FEET AWAY

HANDS AND FEET SAFETY GRAPHIC– LOCATED ON DEFLECTOR CHUTE

DANGER
KEEP HANDS AND FEET AWAY. DO NOT OPERATE MOWER UNLESS CHUTE DEFLECTOR OR ENTIRE GRASS CATCHER IS IN ITS PROPER PLACE.
ASSEMBLE CHUTE DEFLECTOR TO THIS UNIT BEFORE OPERATING.

DEFLECTOR and SAFETY GRAPHIC – LOCATED ON RIGHT SIDE OF DECK

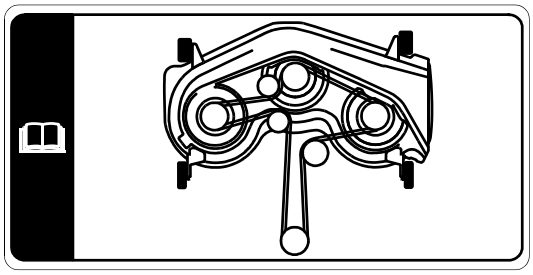
ZT50

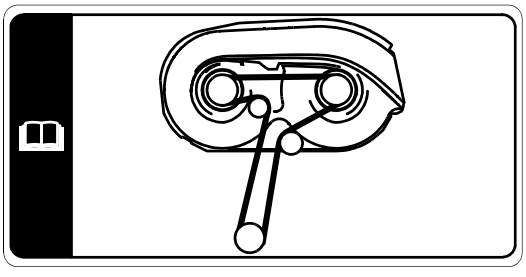
DANGER
AVOID SERIOUS INJURY OR DEATH
▪ KEEP HANDS AND FEET AWAY FROM ROTATING PARTS.
▪ REMOVE OBJECTS THAT CAN BE THROWN BY THE BLADE IN ANY DIRECTION. WEAR SAFETY GLASSES.
▪ DO NOT MOW WHEN CHILDREN OR OTHERS ARE AOUND. NEVER CARRY CHILDREN.
▪ USE EXTRA CAUTION ON SLOPES. DO NOT MOW SLOPES GREATER THAN 15°. MOW UP AND DOWN, NOT ACROSS. AVOID SUDDEN TURNS, USE LOW GEAR.
MAX 15°
READ OPERATOR'S MANUAL. KEEP SAFETY DEVICES WORKING.

ZT42

DANGER
AVOID SERIOUS INJURY OR DEATH
▪ KEEP HANDS AND FEET AWAY FROM ROTATING PARTS.
▪ REMOVE OBJECTS THAT CAN BE THROWN BY THE BLADE IN ANY DIRECTION. WEAR SAFETY GLASSES.
▪ DO NOT MOW WHEN CHILDREN OR OTHERS ARE AROUND. NEVER CARRY CHILDREN.
▪ USE EXTRA CAUTION ON SLOPES. DO NOT MOW SLOPES GREATER THAN 15° MOW UP AND DOWN, NOT ACROSS. AVOID SUDDEN TURNS, USE LOW GEAR.
MAX 15°
READ OPERATOR'S MANUAL. KEEP SAFETY DEVICES WORKING.

SAFETY GRAPHIC – LOCATED ON LEFT SIDE OF MOWER DECK



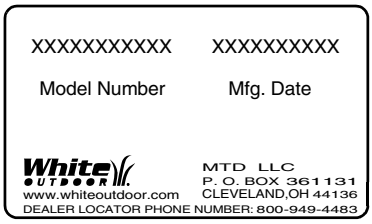


INFORMATION GRAPHIC – BELT ROUTING LOCATED ON LEFT SIDE OF MOWER DECK

RECORDING MODEL AND SERIAL NUMBER

This Operator's Manual is an important part of your new lawn tractor. It will help you assemble, prepare and maintain the unit for best performance. Please read and understand what it says.

Before you start assembling your new equipment, please locate the model plate under the seat of the tractor and copy the information in the space provided below. A sample model plate is also given below. This information will be necessary to use the manufacturer's web site and/or help from the Customer Support Department or an authorized service dealer



Copy the model number here: _____

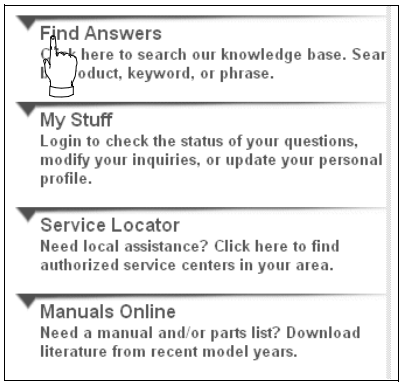
Copy the serial number here: _____

CUSTOMER SUPPORT

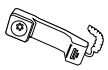
If you have difficulty assembling this product or have any questions regarding the controls, operation or maintenance of this unit, you can seek help from the experts. Choose from the options below:

Visit **whiteoutdoor.com** for many useful suggestions. Click on Customer Support button and you will get the four options reproduced here. Click on the appropriate button and help is immediately available.

The answer you are looking for could be just a mouse click away!


Find Answers
Click here to search our knowledge base. Sear
by product, keyword, or phrase.
My Stuff
Login to check the status of your questions, modify your inquiries, or update your personal profile.
Service Locator
Need local assistance? Click here to find authorized service centers in your area.
Manuals Online
Need a manual and/or parts list? Download literature from recent model years.

The answer you are looking for could be just a mouse click away!



If you prefer to reach the Customer Dealer Referral Line, please call **1(800) 949-4483**.

The **engine** manufacturer is responsible for all engine-related issues with regards to performance, power-rating, specifications, warranty and service. Please refer to the engine manufacturer's Owner's/Operator's Manual, packed seperately in crate, for more information.

TO THE OWNER

Your local authorized *White Outdoor* dealer is interested in the performance you receive from your tractor, and with the maintenance needed to ensure the satisfactory operation of your tractor. The dealer has trained service personnel familiar with the latest servicing information, is equipped with the latest tools, and has a complete line of genuine *White Outdoor* service parts which assure proper fit and high quality.

All references to LEFT, RIGHT, FRONT, and REAR, unless specifically stated otherwise, indicate that relative position on the tractor when facing forward while seated in the operator's seat.

CAUTION: DO NOT tow your Model ZT42 or ZT50 tractor. Towing may cause severe damage the transmissions. Place the tractor on a **Level Surface** before pulling the transmission bypass rods to the engaged position (transmission disengaged).

ZT42SECTION 1: CONTROLS AND FEATURES

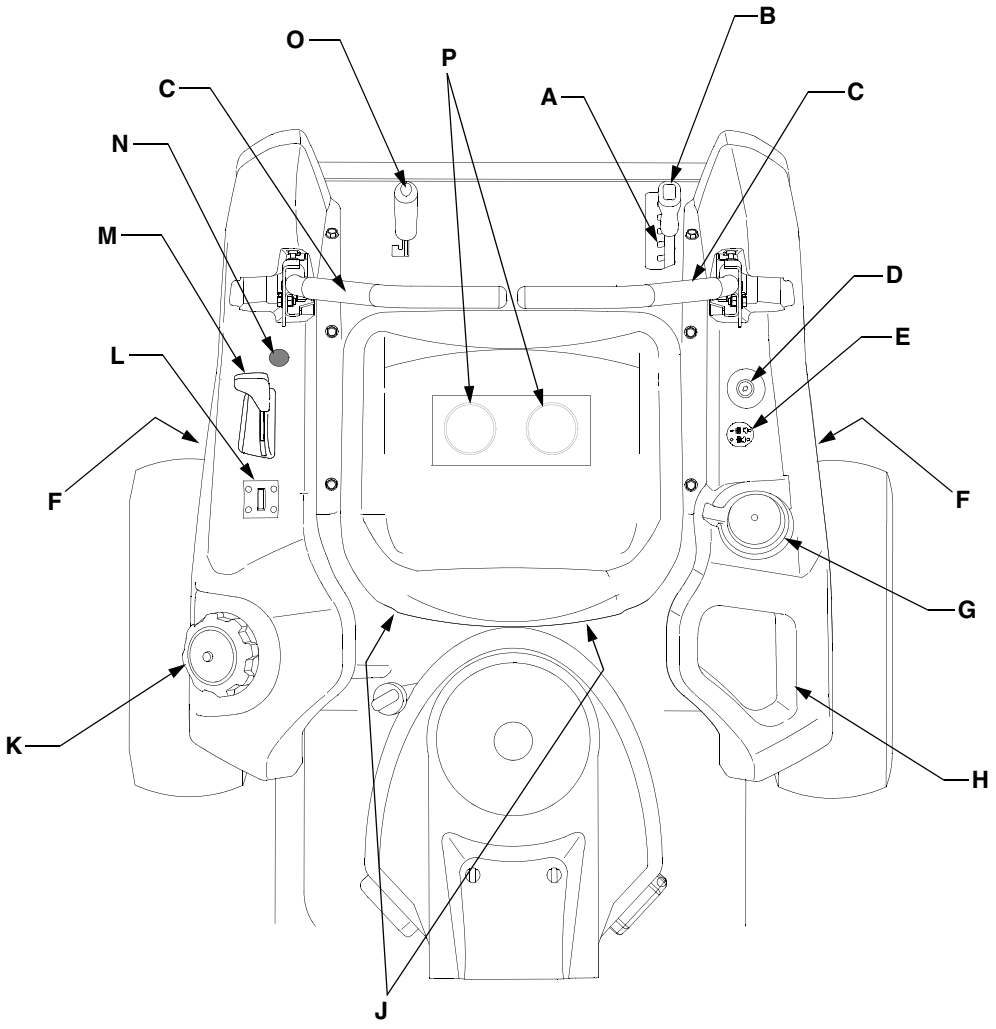


Figure 1

A. Deck Height Index
B. Deck Lift Handle
C. RH and LH Drive Control Levers
D. Ignition Switch
E. PTO Switch
F. Transmission Bypass Rod (Not Shown)
G. Cup Holder
H. Storage Tray
J. Seat Adjustment Knobs (Not Shown)
K. Fuel Tank Cap
L. Hour Meter/Indicator Panel
M. Throttle Control
N. Choke Control—Model ZT50 ONLY
O. Parking Brake Engagement Lever
P. Trans. Oil Expansion Reservoir (Under Seat)

NOTE: *References to LEFT, RIGHT, FRONT, and REAR indicate that position on the tractor when facing forward while seated in the operator's seat.*

A. Deck Height Index

The deck height index consists of six index notches located on the front/right of the seat box frame. Each notch corresponds to a 1/2 inch change in the deck height position ranging from 1-1/2 inches at the lowest notch to 4 inches at the highest notch.

B. Deck Lift Handle

The deck lift handle is located on the front/right of the seat box frame, and is used to raise and lower the mower deck.

Pull the handle to the left out of the index notch and push downward to lower the deck, or pull upward to raise the deck. When the desired height is attained, move the lift handle to the right until fully in the index notch.

C. RH and LH Drive Control Levers

The RH and LH control levers are located to each side of the operator's seat. These hinged levers open out to the side in the neutral position to permit the operator to be seated or to leave the tractor seat. The levers must be fully opened out in the neutral position to start the tractor engine.

Each lever controls the respective RH or LH transmission. Consequently, these levers control all of the movements of the tractor. Driving and steering utilizing these control levers is quite different from conventional tractors, and will take some practice to master. Refer to **SECTION 2: OPERATION** for instructions on using the control levers.

D. Ignition Switch

The ignition switch is located on the RH console to the right of the operator's seat.

The ignition switch has three positions as follow:

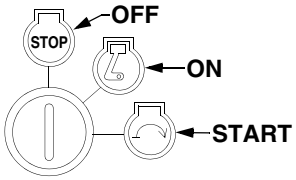


Figure 2

OFF - The engine and electrical system is turned off.

ON - The tractor electrical system is energized.

START - The starter motor will turn over the engine. Release the key immediately when the engine starts

NOTE: *To prevent accidental starting and/or battery discharge, remove the key from the ignition switch when the tractor is not in use.*

E. Power Take-Off (PTO) Switch

The PTO switch is located on the RH console to the right of the operator's seat.

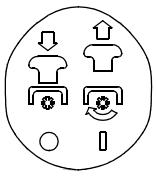


Figure 3

The PTO switch operates the electric PTO clutch mounted on the bottom of the engine crankshaft. Pull the switch knob upward to engage the PTO clutch, or push the knob downward to disengage the clutch.

The PTO switch must be in the "disengaged" position when starting the engine.

F. Transmission Bypass Rods (Not Shown)

The transmission bypass rods (one for each the RH and LH transmission) are located beneath the frame platform, just inside each rear wheel.

When engaged, the two rods open a bypass within the hydrostatic transmissions, which allows the tractor to be pushed short distances by hand. Refer to **SECTION 2: OPERATION** for instructions on using the bypass feature.

WARNING: Never tow your tractor. Towing the tractor with the rear wheels on the ground may cause severe damage to the transmissions.

G. Cup Holder

The cup holder is located toward the rear of the RH console to the right of the operator's seat.

H. Storage Tray

The storage tray is located at the rear of the RH console.

J. Seat Adjustment Knobs (Not Shown)

The seat adjustment knobs are located underneath the seat hinge bracket. The knobs allow for tool free adjustment of the fore to aft position of the operator's seat. Refer to **SECTION 3: ADJUSTMENTS** for instructions on adjusting the seat position.

K. Fuel Tank Cap

The fuel tank cap is located at the rear of the LH console. Turn the cap counterclockwise to unscrew and remove from the fuel tank. Always re-install the fuel cap tightly onto the fuel tank after removing.

WARNING: Never fill the fuel tank when the engine is running. If the engine is hot from recently running, allow to cool for several minutes before refueling. Highly flammable gasoline could splash onto the engine and cause a fire.

L. Hour Meter/Indicator Panel

The hour meter/indicator panel is located on the LH console to the left of the operator's seat.

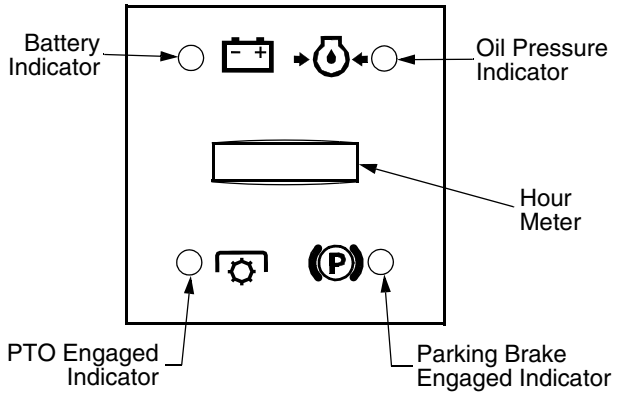


Figure 4

Hour Meter Feature

The purpose of the hour meter is to record the hours (tenths of an hour - *right* most digit) that the tractor has been operated.

- The hour meter is activated whenever the ignition switch is turned to the "ON" position. Because of this, a record of the actual hours of operation should be kept to assure all maintenance procedures are completed according to the schedule in this manual.
- When key is turned to the "ON" position, the battery indicator light briefly illuminates and the battery voltage is briefly displayed. The display then changes to the accumulated hours.

Indicator Panel Feature

Battery Indicator (Refer to Figure 4)

- Illuminates and the battery voltage is displayed briefly when the ignition switch it turned to the "ON" position.
- Illuminates to indicate the battery voltage has dropped below 11.5 (+0.5/-1.0) volts. The battery voltage is also displayed on the hour meter. If this indicator and display come on during operation, check the battery and charging system for possible causes and/or contact your Cub Cadet dealer.

Oil Pressure Indicator (Refer to Figure 4)

- This warning lamp indicates low engine oil pressure. If the indicator comes on while the engine is running, stop the engine immediately and check for possible causes. Do not run the engine while this indicator is illuminated. Contact your Cub Cadet dealer to have the tractor and engine inspected.

NOTE: *The oil pressure indicator may illuminate when the ignition switch is in the ON position, but should turn off when the engine is started*.

PTO Engaged Indicator (Refer to Figure 4)

- This indicator illuminates when the PTO switch is pulled upward in the "ENGAGED" position and the ignition switch is turned to the "START" position. Check this indicator if the engine will not crank with the ignition switch in the "START" position. If necessary, move the PTO switch to the "DISENGAGED" position.

Parking Brake Engaged Indicator (Refer to Figure 4)

- This indicator illuminates when the parking brake is in the DISENGAGED position and the ignition switch is turned to the "START" position. Check this indicator if the engine will not crank with the ignition switch in the "START" position. If necessary, move the parking brake to the ENGAGED position.
  This indicator also illuminates when the ignition switch is turned to the "START" position and the RH and/or LH drive control levers are in a position other than the fully out in neutral position. Move the control levers fully outward.

M. Throttle Control

The throttle control is located on the LH console to the left of the operator's seat. When set in a given position, a uniform engine speed will be maintained.

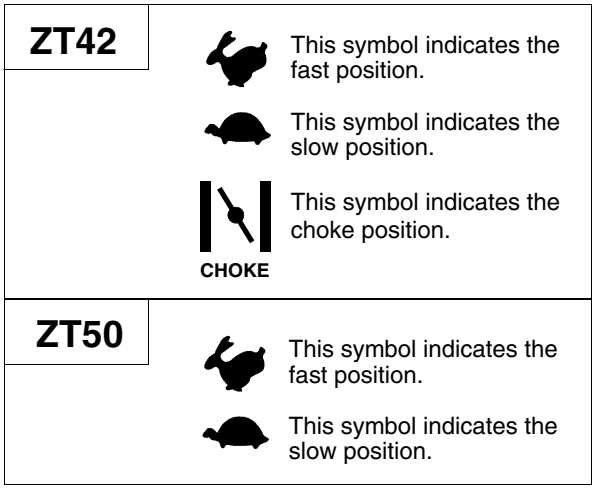

ZT42
This symbol indicates the fast position.
This symbol indicates the slow position.
This symbol indicates the choke position.
CHOKE
ZT50
This symbol indicates the fast position.
This symbol indicates the slow position.

Figure 5

- Push the control handle forward to increase the engine speed. The tractor is designed to operate with the control handle in the fast position (full throttle) when the tractor is driven and the mower deck is engaged.
- Pull the control handle rearward to decrease the engine speed.
- **Model ZT42 ONLY** — When starting the engine, push the control handle fully forward into the "CHOKE" position. See Figure 5. After starting and warming the engine, move the control handle rearward until you feel it move past the choke detent.

N. Choke Control - Model ZT50 ONLY

The choke knob controls the position of the engine choke. Pull the knob out to choke the engine; push the knob in to open the choke.

O. Parking Brake Engagement Lever

The parking brake engagement lever is located on the front/left of the seat box frame, and is used to engage the parking brake.

- Pull the lever fully upward and to the left and lower into the "J" slot to engage the parking brake.
- Pull the lever up out of the "J" slot and to the right; then lower completely to disengage the parking brake.

IMPORTANT: *If the LH and RH drive control levers are not fully opened out in the neutral position when engaging the parking brake, the engine will stop. The parking brake must be placed in the engaged position when starting the tractor engine.*

SECTION 2: OPERATION

GENERAL SAFETY

- RECEIVE INSTRUCTION - Read the operator's manual. Learn to operate this machine SAFELY. Don't risk INJURY or DEATH. Allow only those who have become competent in its usage to operate this tractor .
- Familiarize yourself with the operations of all the instruments and controls.
- Before starting the engine or beginning operation, be familiar with the controls. The operator should be in the operator's seat. The PTO switch must be in the disengaged position, the parking brake engaged, and the RH and LH drive control levers moved fully outward in the neutral position.
- Keep all shields in place. Keep away from moving parts.
- NO RIDERS! Keep all people and pets a safe distance away. Look behind and down to both sides of the tractor before and while backing up.
- DO NOT direct the mower discharge at people.
- Avoid slopes where possible. Never operate on slopes greater than 15°. Slopes with a greater incline present dangerous operating conditions. Tractors can be rolled over.
- Before leaving the operator's seat: Shut off the PTO, move the RH and LH drive control levers fully outward in the neutral position, engage the parking brake, shut off the engine and remove the ignition key. Wait for all movement to stop before servicing or cleaning.
- Operate the drive control levers smoothly and avoid any sudden movements of the levers when starting and stopping. Keep a firm grip on the control levers; do not allow the levers to return to neutral on their own.
- Be careful when operating near roadways. Stop the tractor motion and wait for vehicles to pass before operating along the road.
- Do not operate the tractor with the mower deck removed. Removal of the deck will change the balance of the tractor, and could contribute to a tractor rollover.
- Avoid operation on traction surfaces that are unstable; use extreme caution if the surface is slippery.
- Slow down before turning and come to a complete stop before any zero turn maneuver.
- Do not stop the tractor or park the tractor over combustible materials such as dry grass, leaves, debris, etc.
- Do not fill the fuel tank when the engine is running or while the engine is hot. Allow the engine several minutes to cool before refueling. Tighten the fuel cap securely.

BEFORE OPERATING YOUR TRACTOR

- Before you operate the tractor, study this manual carefully. It has been prepared to help you operate and maintain your tractor efficiently.
- Familiarize yourself with the operations of all the instruments and controls.
- This engine is certified to operate on unleaded gasoline. For best results, fill the fuel tank with only clean, fresh, unleaded gasoline with a pump sticker octane rating of 85 or higher. Unleaded gasoline is recommended because it leaves less combustion chamber deposits.
  Some fuels are gasoline blended with alcohols or ethers. Excessive amounts of the these blends can damage the fuel system or cause engine performance problems. If undesirable operating symptoms occur, use gasoline with a lower percentage of alcohol or ether. Do not use gasoline that contains Methanol.
- Check the engine oil level. See Engine Manual.
  IMPORTANT: Your tractor is shipped with motor oil in the engine. However, you **MUST** check the oil level before operating. The capacity of the engine and oil filter is approximately 48 oz. (1.4 liters) for the model ZT42 and 64 oz. (1.9 liters). for the model ZT50. Be careful not to overfill.
- Clean the air cleaner element if necessary. See Engine Manual.
- Check the tire inflation pressures.
- Adjust the seat for operator's maximum comfort, visibility, and for maintaining complete control of the tractor.

SAFETY INTERLOCK SYSTEM

This tractor is equipped with a safety interlock system for the protection of the operator. If the interlock system should ever malfunction, do not operate the tractor. Contact your authorized *White Outdoor* Dealer.

- The safety interlock system prevents the engine from cranking or starting unless the RH and LH drive control levers are moved fully outward in the neutral position, the parking brake is engaged, and the PTO is disengaged.
- To avoid sudden movement when disengaging the parking brake, the safety interlock system will shut off the engine if the RH and/or LH drive control levers are moved to a position other than the fully out in neutral position when the parking brake is engaged
- The safety interlock system will shut off the engine if the operator leaves the seat before engaging the parking brake.

- The safety interlock system will shut off the engine if the operator leaves the seat with the PTO engaged, regardless of whether the parking brake is engaged.
  NOTE: *The PTO switch must be moved to the "OFF" position to restart the engine.*
- The safety interlock system will shut off the PTO and the mower blades will stop if both drive control levers are moved into the reverse position. The PTO will re-engage when one or both of the levers are moved back to the neutral or forward position.

STARTING THE ENGINE

WARNING: For personal safety, the operator must be sitting in the tractor seat when starting the engine.

WARNING: This unit is equipped with a safety interlock system designed for the protection of the operator. Do not operate the tractor if any part of the interlock system is malfunctioning. Periodically check the functions of the interlock system for proper operation.

- Move the RH and LH drive control levers fully outward in the neutral position. Refer to Figure 6.
- Operator must be sitting in the tractor seat.
- Engage the parking brake. Refer to Figure 6.
- Make certain the PTO switch is in the disengaged (down) position. Refer to Figure 6.
- **Model ZT42 ONLY**
  1. Move the throttle control lever fully forward into the "CHOKE" position. **NOTE:** *If the engine is warmed up, it may not be necessary to place the throttle control in the choke position.*
  2. Turn the ignition key clockwise to the “START” position and release it as soon as the engine starts; however, do not crank the engine continuously for more than 5 seconds at a time. If the engine does not start within this time, turn the key to “OFF” and wait a minute to allow the engine’s starter motor to cool. Try again after waiting. If after a few attempts the engine fails to start, do not keep trying to start it with the choke closed as this will cause flooding and make starting more difficult.
  3. As the engine warms up, gradually pull the throttle control lever rearward past the choke detent position. Do not use the choke to enrich the fuel mixture, except as necessary to start the engine.
- **Model ZT50 ONLY**
  1. Pull the choke control knob upward to the full choke position. **NOTE:** *If the engine is warmed up, it may not be necessary to choke the engine.*
  2. Move the throttle control lever fully forward to the "fast" position.

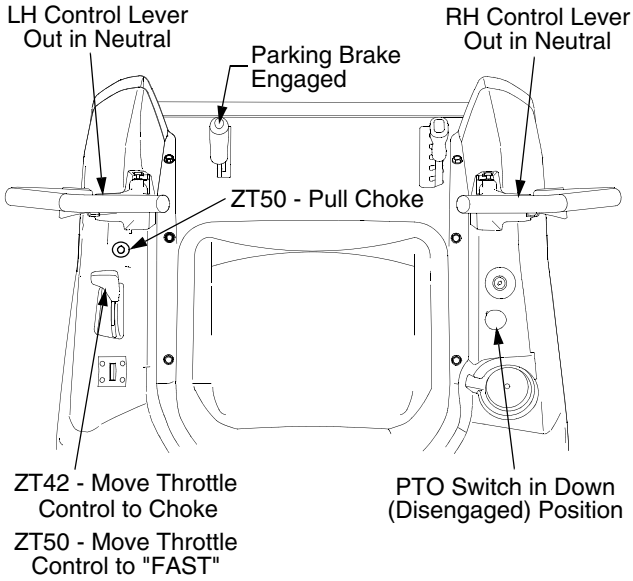


Figure 6

  3. Turn the ignition key clockwise to the “START” position and release it as soon as the engine starts; however, do not crank the engine continuously for more than 5 seconds at a time. If the engine does not start within this time, turn the key to “OFF” and wait a minute to allow the engine’s starter motor to cool. Try again after waiting. If after a few attempts the engine fails to start, do not keep trying to start it with the choke closed as this will cause flooding and make starting more difficult.
  4. As the engine warms up, gradually push the choke knob downward to open the choke. Do not use the choke to enrich the fuel mixture, except as necessary to start the engine.
- Allow the engine to run for a few minutes at mid throttle before putting the engine under load.
- Observe the hour meter/indicator panel. If the battery indicator light or oil pressure light come on, immediately stop the engine. Have the tractor inspected by your *White Outdoor* dealer.

COLD WEATHER STARTING

Be sure to use the proper oil for the expected temperatures (check the table in the engine manual). Follow the normal engine starting instructions above. However, allow the engine ample time to warm up before putting the tractor under load.

USING JUMPER CABLES TO START ENGINE

WARNING: Batteries contain sulfuric acid and produce explosive gasses. Make certain the area is well ventilated, wear gloves and eye protection, and avoid sparks or flames near the battery.

If the battery charge is not sufficient to crank the engine, recharge the battery. If a battery charger is unavailable and the tractor must be started, the aid of a booster battery will be necessary. Connect the booster battery as follows:

- Connect the end of one cable to the disabled tractor battery's positive terminal; then connect the other end of that cable to the booster battery's positive terminal.
- Connect one end of the other cable to the booster battery's negative terminal; then connect the other end of that cable to the frame of the disabled tractor, as far from the battery as possible.
- Start the disabled tractor following the normal starting instructions previously provided; then disconnect the jumper cables in the exact reverse order of their connection.
- Have the tractor's electrical system checked and repaired as soon as possible to eliminate the need for jump starting.

STOPPING THE ENGINE

- Place the PTO switch in the "OFF" position.
- Engage the parking brake.
- Move the RH and LH drive control levers fully outward in the neutral position.
- **Model ZT42 ONLY** — Place the throttle control lever to the fast (high idle) position.
- **Model ZT50 ONLY** — Place the throttle control lever to the slow (idle) position.
- Turn the ignition key to the "OFF" position and remove the key from the ignition switch.

NOTE: *Always remove the key from the ignition switch to prevent accidental starting or battery discharge if the equipment is left unattended.*

PRACTICE OPERATION (INITIAL USE)

Operating a zero-turn tractor is not like operating a conventional type riding tractor. Although and because a zero-turn tractor is more maneuverable, getting used to operating the control levers takes some practice.

We strongly recommend that you locate a reasonably large, level and open "practice area" where there are no obstructions, pedestrians, or animals. You should practice operating the tractor for a minimum of 30 minutes.

Carefully move (or have moved) the tractor to the practice area. When performing the practice session, the PTO should not be engaged. While practicing, operate the tractor at approximately 1/2-3/4 throttle and at less than full speed in both forward and reverse.

Carefully practice maneuvering the tractor using the instructions in the following section "Driving the Tractor." Practice until you are confident that you can safely operate the tractor.

DRIVING THE TRACTOR

WARNING: Avoid sudden starts, excessive speed and sudden stops.

WARNING: Do not leave the seat of the tractor without disengaging the PTO, moving drive control levers fully outward in the neutral position, and engaging the parking brake. If leaving the tractor unattended, turn the ignition key off and remove key.

- Adjust the operator's seat to the most comfortable position that allows you to operate the controls. See seat adjustment in the **ADJUSTMENTS** section.
- Release the parking brake.
- Move the RH and LH drive control levers inward in the neutral position. See Figure 7.

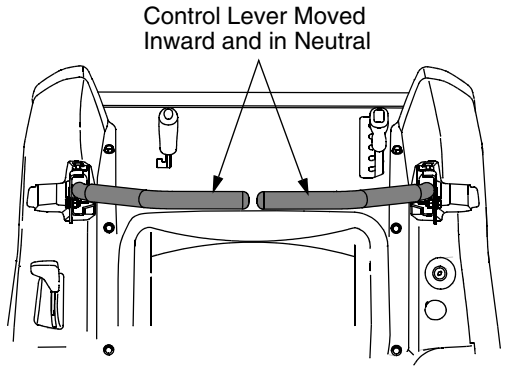


Figure 7

- Move the throttle control lever forward to the full throttle position (3500-3600 RPM).

NOTE: *The tractor and engine are designed to run at full throttle. If performing a practice session, it is preferable that the tractor is operated at less than full throttle (approximately 2500-3000 RPM), but this only applies to practice operation.*

NOTE: *For Model ZT42, make certain the throttle control has not been moved too far forward into the "Choke" position.*

- To drive the tractor, firmly grasp the respective drive control levers with your right and left hands and proceed as follows :

WARNING: Always maintain a firm grip on the control levers. DO NOT release the control levers to slow or stop the tractor; move the levers to the neutral position using your hands.

Driving the Tractor Forward

WARNING: Keep all movement of the drive control levers slow and smooth. Abrubt movement of the control levers can affect the stability of the tractor and could cause the tractor to flip over, which may result in serious injury or death to the operator.

- Slowly and evenly move both drive control levers forward. The tractor will start to move forward. See Figure 8.
- As the control levers are pushed farther forward the speed of the tractor will increase.

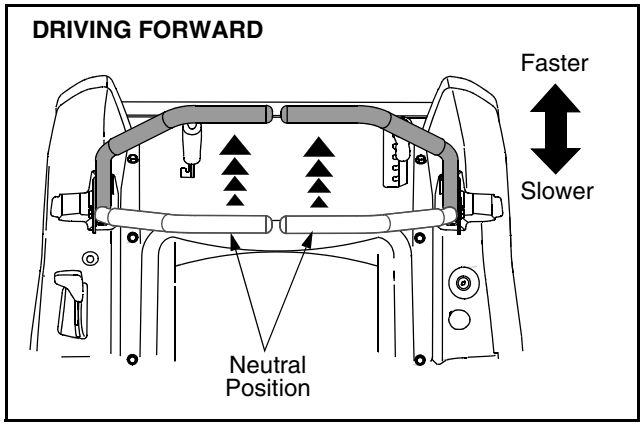


Figure 8

- To slow the tractor move the controls lever rearward to attain the desired speed, or move the levers to the neutral position to stop the tractor.

IMPORTANT: ***Always maintain your grasp on the drive control levers. Do not release the levers to slow the tractor or to return to neutral.***

Turning the Tractor While Driving Forward

WARNING: When reversing the direction of travel, we recommend performing gradual 'U' turns where possible. Sharper turns increase the possibility of turf defacement, and could affect control of the tractor. ALWAYS slow the tractor before making sharp turns.

- To turn the tractor while driving forward, move the control levers as necessary so that one lever is rearward of the other. The tractor will turn in the direction of the rearward control lever.
  - To turn to the left, move the left drive control lever rearward of the right lever. See Figure 9.

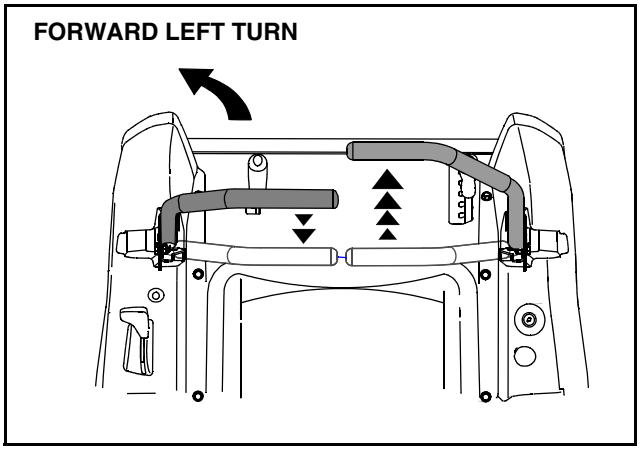


Figure 9

- To turn to the right, move the right drive control lever rearward of the left lever. See Figure 10.

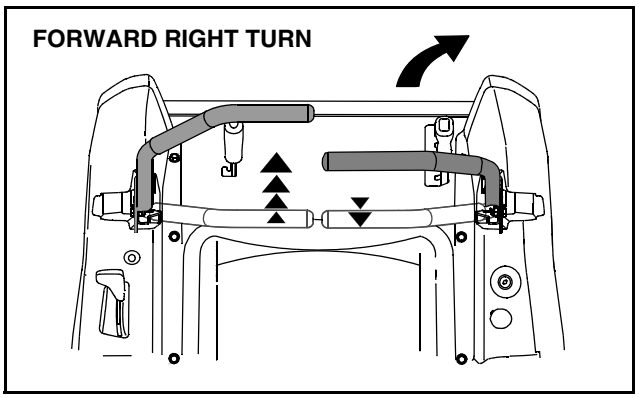


Figure 10

- The greater the fore-to-aft distance between the two levers, the sharper the tractor will turn.
- To execute a "pivot turn," move the turn side drive control lever to the neutral position, while moving the other control lever forward.
  IMPORTANT: ***Making a "pivot turn" on grass will greatly increase the potential for defacement of the turf.***

Driving the Tractor In Reverse

WARNING: Always look behind and down on both sides of the tractor before backing up. Always look behind while traveling in the reverse direction.

- Slowly and evenly move both drive control levers rearward. The tractor will start to move in the reverse direction. See Figure 11.

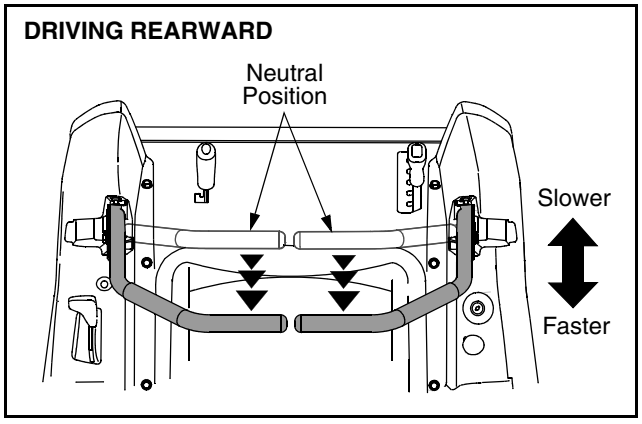


Figure 11

- As the control levers are pushed farther rearward the speed of the tractor will increase.
- To slow the tractor move the controls lever forward to attain the desired speed, or move the levers to the neutral position to stop the tractor.

IMPORTANT: ***Always maintain your grasp on the drive control levers. Do not release the levers to slow the tractor or to return to neutral.***

Turning While Driving Rearward

- To turn the tractor while driving rearward, move the control levers as necessary so that one lever is forward of the other. The tractor will turn in the direction of the forward control lever.
  - To turn to the left while traveling in reverse, move the left drive control lever forward of the right lever. See Figure 12.

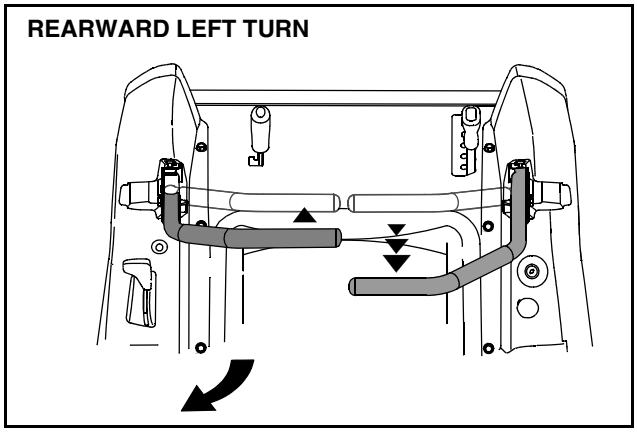


Figure 12

  - To turn to the right while traveling in reverse, move the right drive control lever forward of the left lever. See Figure 13.

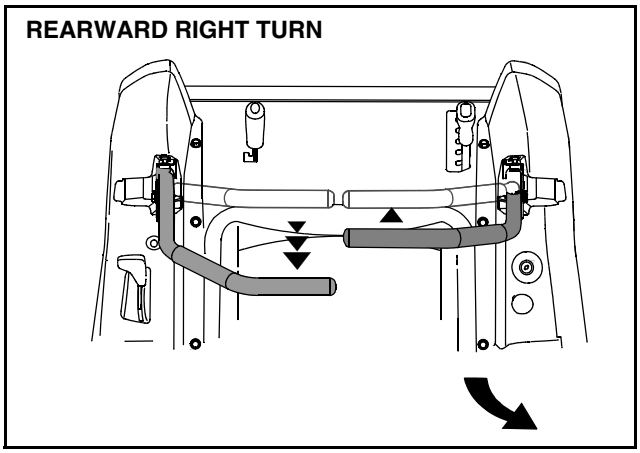


Figure 13

- The greater the fore-to-aft distance between the two levers, the sharper the tractor will turn.
- To execute a "pivot turn," move the turn side drive control lever to the neutral position, while moving the other control lever rearward.
  IMPORTANT: ***Making a "pivot turn" on grass will greatly increase the potential for defacement of the turf.***

Executing a Zero Turn

WARNING: When executing a zero turn, the tractor MUST BE STOPPED. Executing a zero turn while the tractor is moving can significantly reduce your control of the tractor and will cause severe turf defacement to occur.

- Stop the forward or reverse motion of the tractor by moving the two drive control levers to neutral.
- To turn clockwise, slowly move the left control lever forward while simultaneously moving the right control lever rearward. See Figure 14.

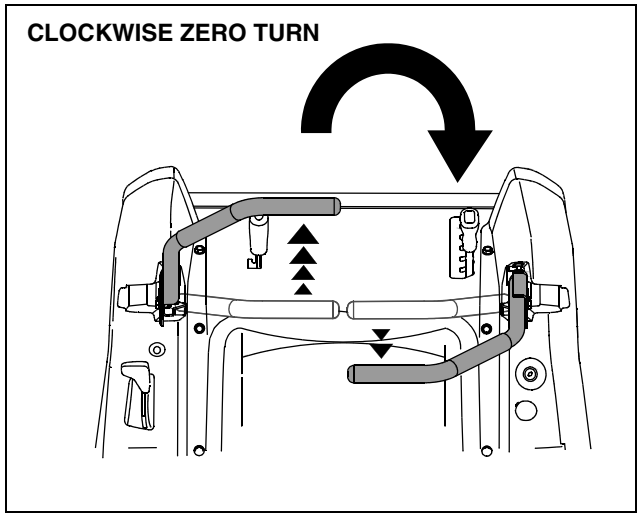


Figure 14

- To turn counterclockwise, slowly move the right control lever forward while simultaneously moving the left control lever rearward. See Figure 15.

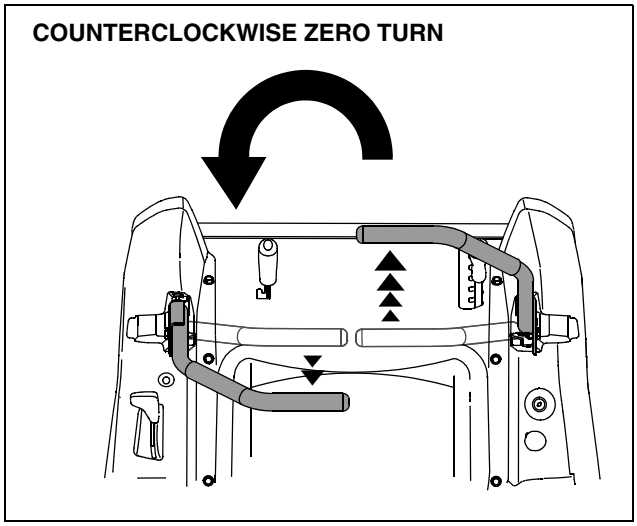


Figure 15

STOPPING THE TRACTOR

- Move both drive control levers to the neutral position to stop the motion of the tractor.
- Push the PTO switch downward to the disengaged position.
- Use the deck lift handle to raise the deck to its highest position.
- If dismounting the tractor:
  - Move the drive control handles fully outward in the neutral position.
  - Engage the parking brake.
  - Move the throttle control lever to the fast position if operating a ZT42 tractor, or to the slow position if operating a ZT50 tractor.
  - Turn the ignition switch to "OFF"" and remove the key from the switch.

DRIVING ON SLOPES

Refer to the SLOPE GAUGE on page 31 to help determine slopes where you may not operate safely.

WARNING: Do not operate on inclines with a slope in excess of 15 degrees (a rise of approximately 2-1/2 feet every 10 feet). The tractor could overturn and cause serious injury.

- Always drive across slopes, never up and down. Control the speed and direction of the tractor using primarily the control lever on the downhill side of the tractor, with the uphill control lever remaining essentially in a fixed position.
- Avoid turning downhill if possible. Start at the bottom of a slope and work upward. Always slow down before turning.
- Use extra care and go slowly when turning downhill.

OPERATING THE PTO

Operate the PTO clutch as follows:

- Move the throttle control lever to approximately the mid throttle position.
- Pull the PTO switch upward to the "ENGAGED" position.
- Advance the throttle lever to the operating speed (full engine speed).
- The operator must remain in the tractor seat at all times. If the operator should leave the seat without turning off the power take-off switch, the tractor's engine will shut off.
- The PTO clutch cannot be operated when the tractor is driving in the reverse direction. The PTO will disengage when both drive control levers are moved to the reverse position, and will re-engage when one (or both) control levers are moved to the neutral or forward position.

USING THE MOWER DECK

WARNING: Make certain the area to be mowed is free of debris, sticks, stones, wire or other objects that can be thrown by the rotating blades.

IMPORTANT: ***Do not engage the mower deck when lowered in grass. Premature wear and possible failure of the 'V" belt and PTO clutch will result. Fully raise the deck or move to a non grassy area before engaging the mower deck.***

- Mow across slopes, not up and down. If mowing a slope, start at bottom and work upward to ensure turns are made uphill.
- On the first pass pick a point on the opposite side of the area to be mowed.
- Engage the PTO clutch using the PTO switch and move the throttle control to the fast position.
- Lower the mower deck to the desired height setting using the lift handle.
- Slowly and evenly push the RH and LH drive control levers forward to move the tractor forward, and keep the tractor headed directly toward the alignment point.
  NOTE: *The speed of the tractor will affect the quality of the mower cut. Mowing at full speed will adversely affect the cut quality. Control the ground speed with the control levers.*
- When approaching the other end of the strip, slow down or stop before turning. A U-turn is recommended unless a pivot or zero turn is required.
- Align the mower with an edge of the mowed strip and overlap approximately 3 inches.
- Direct the tractor on each subsequent strip to align with a previously cut strip.
- To prevent rutting or grooving of the turf, if possible, change the direction that the strips are mowed by approximately 45° for the next and each subsequent mowing.

WARNING: Be careful when crossing gravel paths or driveways. Disengage the PTO and raise the deck to the highest position before crossing.

IMPORTANT: ***When stopping the tractor for any reason while on a grass surface, always:***

- Place the shift lever in neutral,
- Engage the parking brake,
- Shut engine off and remove the key.

Doing so will minimize the possibility of having your lawn "browned" by hot exhaust from your tractor's running engine.

CHECKING THE SAFETY INTERLOCK CIRCUITS

Periodically check the safety interlock circuits to ensure they are working properly. If a safety circuit is not working as designed, contact you White Outdoor dealer to have the tractor inspected. DO NOT operate the tractor if any safety circuit is not functioning properly. To check the safety circuits, proceed as follows:

- Sitting in the tractor seat with both drive control levers opened fully outward, disengage the parking brake and momentarily turn the ignition switch to the start position. The engine should not crank.
- Engage the parking brake and pull the PTO switch upward to the engaged position. Momentarily turn the ignition switch to the start position; the engine should not crank.
- Push the PTO switch downward to the disengaged position and engage the parking brake. Start the engine and move one of the drive control levers from the fully outward neutral position. The engine should stop running. Repeat the procedure with the opposite control lever.
- Move both control levers fully outward in the neutral position and disengage the parking brake; then lift upward from the operator's seat. The engine should stop.
- With both control levers fully outward in the neutral position and the parking brake engaged, engage the PTO. Lift upward from the operator's seat; the engine should stop.
- Start the tractor, disengage the parking brake, and move the control levers inward to the neutral operating position. Engage the PTO and move both control lever slowly into the slow reverse position; the PTO should disengage and the mower deck should stop until one or both of the control levers are moved to the neutral or forward position.

SECTION 3: ADJUSTMENTS

ADJUSTING THE OPERATORS SEAT

The seat may be adjusted fore and aft for the comfort of the operator. To adjust the seat proceed as follows:

- Pivot the seat partially forward and hold in a position that allows you to access the adjustment knobs on the bottom of the seat.
- Loosen the two adjustment knobs and slide the seat forward or backward in the adjustment slots to the desired position, then retighten the knobs. See Figure 16.

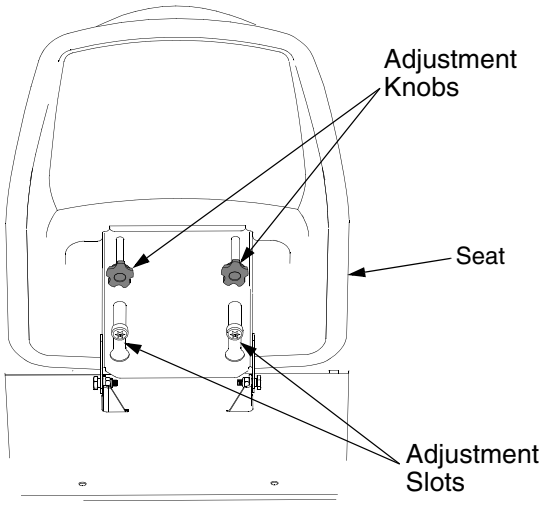


Figure 16

ADJUSTING RH & LH DRIVE CONTROL LEVERS

The RH and LH drive control levers can be adjusted up or down and fore-and-aft for the comfort of the operator. The levers can be placed in either of two height positions, or can be moved forward or rearward within the range of the upper slots on each control lever mounting bracket.

To adjust the drive control lever height, proceed as follows:

- Remove the two hex insert lock nuts from the hex cap screws securing the control lever to the control pivot bracket. Refer to Figure 17.
- While holding the hex cap screws in the control lever mounting bracket, remove the control lever w/screws from the pivot bracket and reposition by inserting the screws into the other pair of holes.
- Secure the control lever with the two hex insert lock nuts. **NOTE:** *If also adjusting the forward/ rearward position of the control levers, do not fully tighten the hex insert lock nuts now, but proceed to the next step.*

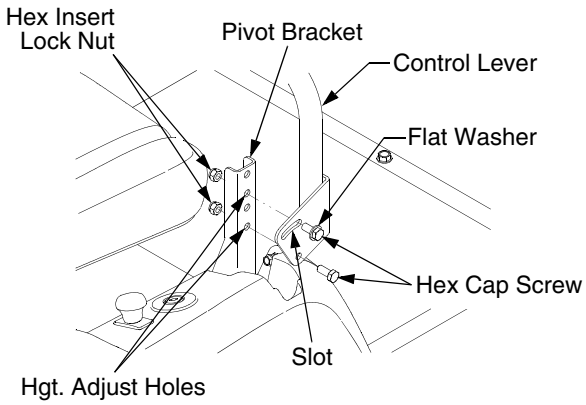


Figure 17

To adjust the drive control levers forward or rearward, proceed as follows:

- Loosen, but do not remove, the two hex insert lock nuts and hex cap screws securing the control lever to the control pivot bracket. Refer to Figure 17.
- Rotate the control lever either forward or rearward to the desired position.
- Tight the two hex insert lock nuts and hex cap screws to secure in the control lever.

SECTION 4: MAINTENANCE

ENGINE MAINTENANCE

Engine maintenance procedures and schedules can be found in the engine manual. Follow those instructions for performing engine maintenance.

Using the Engine Oil Drain Valve

- Locate the oil drain valve on the left side of the engine. Pop open the protective cap on the end of the oil drain valve to expose the oil drain port. See Figure 18.
- Push the oil drain hose (packed with this manual) onto the oil drain port. Route the opposite end of the hose into an appropriate oil collection container with a capacity great enough to collect the used oil (48 oz.- ZT42; 64 oz.- ZT50).

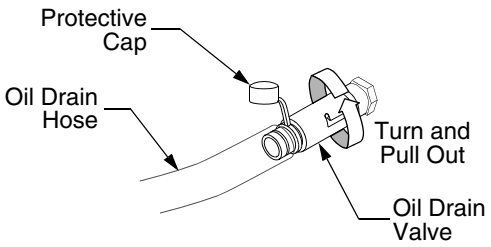


Figure 18

- Push the oil drain valve in slightly, then rotate counterclockwise and pull outward to begin draining oil. See Figure 18.
- After draining oil, push the drain valve fully inward and turn clockwise to close. Remove drain hose and snap the cap onto the drain valve.

HYDROSTATIC TRANSMISSION MAINTENANCE

The zero turn tractor is equipped with dual integrated hydrostatic pumps, motors, and transaxles that are sealed and do not require regular maintenance.

Under normal operating conditions, the oil level in the expansion reservoirs does not need to be checked and no additional oil is needed.

If checking the reservoir oil level, proceed as follows:

IMPORTANT: ***Check the oil level ONLY before starting the tractor when the transmission oil is fully cooled.***

- Pivot the operator's seat forward
- Clean the reservoir caps and the area around the caps to prevent debris from contaminating the transmission oil. Refer to Figure 19.
- Turn reservoir cap counterclockwise to remove and check the oil level in the reservoir. Oil should be visible at the bottom of the cup, but the oil level must NOT be above 1/4" from the bottom of the cup. DO NOT FILL THE RESERVOIR.
- If needed, use a quality 20W50 motor oil and add only enough oil to bring the level within 1/4" of the bottom of the reservoir.
- Reinstall the cap and fully tighten.

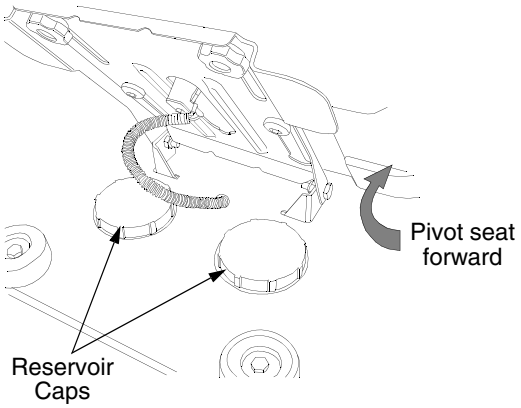


Figure 19

All service work on the hydrostatic transmissions should be performed by your *White Outdoor* dealer.

GENERAL BATTERY INFORMATION

WARNING:

- Battery posts, terminals and related accessories contain lead and lead compounds. Wash hands after handling.
- Should battery acid accidentally splatter into the eyes or onto the skin, rinse the affected area immediately with clean cold water. If there is any further discomfort, seek prompt medical attention.
- If acid spills on clothing, first dilute it with clean water, then neutralize with a solution of ammonia/water or baking soda/water.
- NEVER connect (or disconnect) battery charger clips to the battery while the charger is turned on, as it can cause sparks.
- Keep all sources of ignition (cigarettes, matches, lighters) away from the battery. The hydrogen gas generated during charging can be combustible.
- As a further precaution, only charge the battery in a well ventilated area.
- Always shield eyes and protect skin and clothing when working near batteries.

WARNING: Batteries contain sulfuric acid and may emit explosive gases. Use extreme caution when handling batteries. Keep batteries out of the reach of children.

BATTERY REMOVAL

WARNING: Battery posts, terminals and related accessories contain lead and lead compounds. Wash hands after handling.

The battery is located on the right/rear of the tractor beneath the seat box frame.

To remove the battery:

- Grasp the bottom of the battery holddown strap and pull downward and rearward to release it from the tab in the frame.
- Remove the hex cap screw and sems nut securing the black negative battery lead to the negative battery post (marked NEG). Move the cable away from the negative battery post.
- Remove the hex cap screw and sems nut securing the red positive battery lead to the positive battery post (marked POS).
- Carefully lift the battery out of the tractor.

Install the battery by repeating the above steps in the reverse order.

WARNING: Always connect the positive lead to the battery before connecting the negative lead. This will prevent sparking or possible injury from an electrical short caused by contacting the tractor body with tools being used to connect the cables.

CHARGING THE BATTERY

Test and, if necessary, recharge the battery after the tractor has been stored for a period of time.

- A voltmeter or load tester should read 12.6 volts (DC) or higher across the battery terminals.
- Charge the battery with a 12-volt battery charger at a **MAXIMUM** rate of 10 amps.

Voltmeter Reading	State of Charge	Charging Time
12.7	100%	Full Charge
12.4	75%	90 Min.
12.2	50%	180 Min.
12.0	25%	280 Min.

BATTERY MAINTENANCE

The battery is filled with battery acid and then sealed at the factory. However, even a “maintenance free” battery requires some maintenance to ensure its proper life cycle.

- Spray the terminals and exposed wire with a battery terminal sealer, or coat the terminals with a thin coat of grease or petroleum jelly, to protect against corrosion.
- Always keep the battery cables and terminals clean and free of corrosion.
- Avoid tipping. Even a sealed battery will leak electrolyte when tipped.

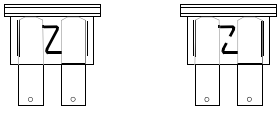
BATTERY STORAGE

- When storing the tractor for extended periods, disconnect the negative battery cable. It is not necessary to remove the battery.
- All batteries discharge during storage. Keep the exterior of the battery clean, especially the top. A dirty battery will discharge more rapidly.
- The battery must be stored with a full charge. A discharged battery can freeze sooner than a charged battery. A fully charged battery will store longer in cold temperatures than hot.
- Recharge the battery before returning to service. Although the tractor may start, the engine charging system may not fully recharge the battery.

SERVICING ELECTRICAL SYSTEM

A fuse is installed to protect the tractor’s electrical system from damage caused by excessive amperage. Always use the same capacity fuse for replacement. If the electrical system does not function, check for a blown fuse. See Figure 20

If you have a recurring problem with blown fuses, have the tractor’s electrical system checked by your White Outdoor dealer.



GOOD BAD

Figure 20

There are several safety switches in the electrical system. If a function of the safety interlock system described earlier is not functioning properly, have the electrical system checked by your White Outdoor dealer.

LUBRICATION

- Using a pressure lubricating gun, lubricate the front castor axles with a No. 2 multi-purpose lithium grease after every 10 hours of service.
- From underneath the left rear of the tractor, locate the tractor drive belt idler pulley and idler bracket. Using a pressure lubricating gun, lubricate the idler bracket with No. 2 multi-purpose lithium grease after every 10 hours of service.
- Refer to the "MOWER DECK" section later in this manual for deck lubrication procedures.
- Periodically lubricate all other pivot points with a quality lubricating oil.

TIRE MAINTENANCE

Check the tire air pressure after every 50 hours of operation or weekly. Keep the tires inflated to the recommended pressures. Improper inflation will shorten the service life of a tire. See the tire side wall for proper inflation pressures. Observe the following guidelines:

- Do not inflate a tire above the maximum pressure shown on the sidewall of the tire.
- Do not reinflate a tire that has been run flat or seriously under inflated. Have a qualified tire mechanic inspect and service the tire.

USING THE TRANSMISSION BYPASS RODS

If for any reason the tractor will not drive or you wish to move the tractor, the two hydrostatic transmissions are equipped with bypass rods that will allow you to manually move the tractor short distances.

WARNING: Do not tow the tractor, even with the bypass rod engaged. Serious transmission damage will result from doing so.

- From just in front of the two rear tires, locate the transmission bypass rods. See Figure 21.
- Pull one rod toward the front of the tractor until the flange on the rod is forward of the keyhole slot in the frame assembly.
- Lower the bypass rod into the keyhole slot and release so the rod flange is against the front of the frame bracket.
- Repeat the above procedure to engage the other bypass rod.

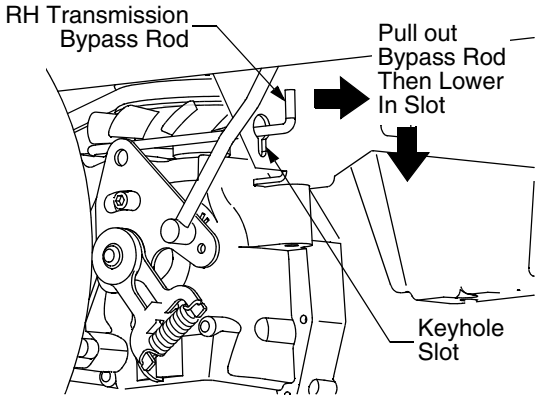


Figure 21

- After moving the tractor, disengage both bypass rods. Lift the rod and guide the flange of the rod back through the larger circular opening of the keyhole, then release the rod.

IMPORTANT: ***The tractor will not drive with the bypass rods in the engage position.***

TRACTOR CREEPING

Creeping is the slight forward or backward movement of the tractor when the engine is running at high idle and the drive control levers are opened out in the neutral position.

If after operating the tractor for some time, it begins to creep while in the neutral position, adjust the transmission control rods as follows.

- Place the front of the tractor against an immovable object (e.g. wall, post, etc.).
- Jack up the rear of the tractor so that both rear wheels are approximately one inch of the ground.
- With the engine running at high idle and the drive control levers opened out in the neutral position, and the parking brake disengaged, check the rear wheels for rotation.
- If only one wheel is rotating, locate the transmission control rod beneath the frame at the front of the rear tire. If both wheels rotate, locate both control rods. See Figure 22.

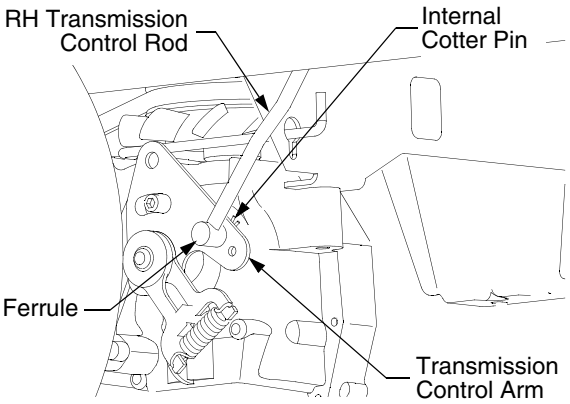


Figure 22

- Remove the internal cotter pin securing the ferrule to the transmission control arm and withdraw the ferrule. Wheel rotation should stop. If it does not, contact your White Outdoor dealer.
- If the rotation stops, adjust the ferrule up or down the control rod as necessary to align with the hole in the transmission control arm. Re-insert the ferrule into the hole in the control arm and secure with the internal cotter pin.
- If necessary, repeat the previous two steps to adjust the other transmission control rod.
- Lower the tractor and remove the jack.

TRACTOR HIGH SPEED TRACKING

If the tractor tracks to one side with both drive control levers fully forward, adjust the control levers as follows:

- Check for proper and balanced air pressure in both front and rear tires. Refill tires if necessary.
- Perform the first three steps in the previous sub-section, Tractor Creeping, to verify that the tractor is not creeping. If creeping, adjust following the instructions in that sub-section.
- Recheck the tracking after making any adjustments to the transmission control rods.
- If uneven tracking persists, note which direction the tractor is tracking.
  - If the tractor tracks to the right, adjust the control lever stop bolt on the left side.
  - If the tractor tracks to the left, adjust the control lever stop bolt on the right side.
- Locate the applicable stop bolt on the left or right console. See Figure 23.

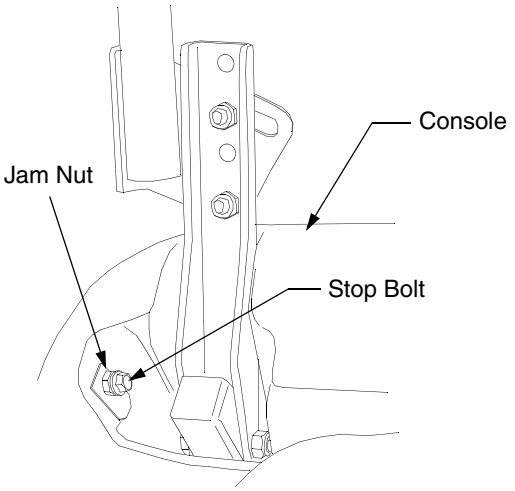


Figure 23

- Loosen the jam nut on the stop bolt, then turn the stop bolt counterclockwise to make it longer. Recheck the tracking and fine tune the adjustment as necessary.
  NOTE: *If the stop bolt is adjusted too far, the tracking problem will change sides. Make fine tuning adjustments by shortening the same bolt.*
- Tighten the jam nut against the console and reposition the control lever if necessary.

TRANSMISSION DRIVE BELT

If the transmission drive belt becomes worn and causes the drive transmissions to slip, the drive belt must be replaced. To replace the drive belt, proceed as follows:

- Remove the deck drive belt from the PTO clutch on the bottom of the engine following the instructions in Deck Removal, SECTION 5: MOWER DECK.
- From beneath the rear of the tractor, insert a 3/8 inch drive ratchet into the square hole of the drive idler bracket. See Figure 24.

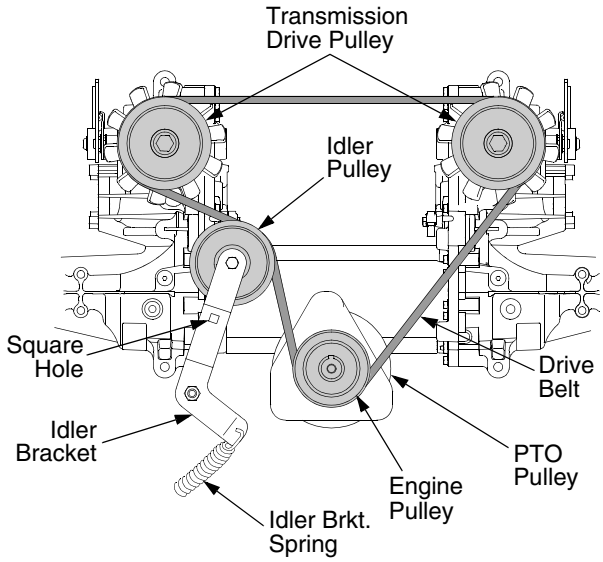


Figure 24

- Using the ratchet for leverage, pivot the idler bracket and idler pulley away from the backside of the 'V" belt; then lift the belt off and **above** the engine pulley and off the idler pulley.
- With the belt loose, lift the belt off, up and over the two transmission drive pulleys. Remove the belt from the engine and idler pulleys.
- Loop the new belt and slide over and onto the two transmission pulleys.
- Route the belt above the idler bracket back to the engine drive pulley. Lift the belt over the PTO pulley and above the engine drive pulley.
- Using the ratchet for leverage, pivot the idler bracket and idler pulley against the spring tension; then slip the belt down into the engine drive pulley and onto the idler pulley.
- Release the idler bracket so that the idler pulley tightens against the back side of the belt and tensions the drive belt.
- Reinstall the deck drive belt.

TRACTOR STORAGE

If your tractor is not going to be operated for an extended period of time (thirty days to approximately six months), the tractor should be prepared for storage. Store the tractor in a dry and protected location. If stored outside, cover the tractor (including the tires) to protect it from the elements. The procedures outlined below should be performed whenever the tractor is placed in storage.

1. Change the engine oil and filter following the instructions provided in the engine manual.

WARNING: Never store the tractor with fuel in the tank indoors or in poorly ventilated enclosures, where fuel fumes may reach an open flame, spark or pilot light as on a furnace, water heater, clothes dryer, etc.

WARNING: Fuel left in the fuel tank deteriorates and will cause serious starting problems.

2. **If storing the tractor for 30 days or more:**
   To prevent gum deposits from forming inside the engine's carburetor and causing possible malfunction of the engine, the fuel system must be either completely emptied, or the gasoline must be treated with a stabilizer to prevent deterioration.

   Using a fuel stabilizer:

   - Read the product manufacturer's instructions and recommendations.
   - Add to clean, fresh gasoline the correct amount of stabilizer for the capacity (approximately 3 gallons) of the fuel system.
   - Fill the fuel tank with treated fuel and run the engine for 2-3 minutes to get stabilized fuel into the carburetor.

   Emptying the fuel system:

   - Prior to putting the tractor in storage, monitor fuel consumption with the goal of running the fuel tank empty.
   - Run the engine until it begins to stall. Use the choke to keep the engine running until all fuel in the carburetor has been exhausted.
3. Clean the engine and the entire tractor thoroughly.
4. Fully charge the battery, then disconnect the negative cable at the battery to prevent possible discharge. Recharge the battery periodically when in storage.

NOTE: *Remove the battery if exposed to prolonged periods of sub-freezing temperatures. Store in a cool, dry location where temperatures are above freezing.*

5. Lubricate all lubrication points.

NOTE: *We do not recommend the use of a pressure washer or garden hose to clean your unit. They may cause damage to electrical components; spindles; pulleys; bearings; or the engine. The use of water will result in shortened life and reduce serviceability*.

REMOVING THE TRACTOR FROM STORAGE

- Check the engine oil.
- Fully charge the battery and inflate the tires to the recommended pressure.
- Start the engine and allow to idle for a few minutes to ensure engine is operating properly.
- Drive the tractor without a load to make certain all the tractor systems are functioning properly.

SECTION 5: MOWER DECK

This section contains removal, installation, adjustment, and maintenance information for the 42-inch (ZT42) and 50-inch (ZT50) mower decks.

DECK REMOVAL

Remove the mower deck from the tractor as follows:

- Move the tractor to a level surface, disengage the PTO, stop the engine, and set the parking brake.
- Move the deck gauge wheels to their highest setting (lowest deck setting).
- Lower the deck to the ground using the deck lift handle.
- From beneath the middle of the tractor, insert a 1/2 inch ratchet into the square hole of the deck idler bracket. See Figure 25.
- Using the ratchet for leverage, pivot the idler bracket and movable idler pulley away from the backside of the ‘V" belt; then lift the belt off of both the movable and fixed idler pulleys. See Figure 25.

42 INCH DECK SHOWN

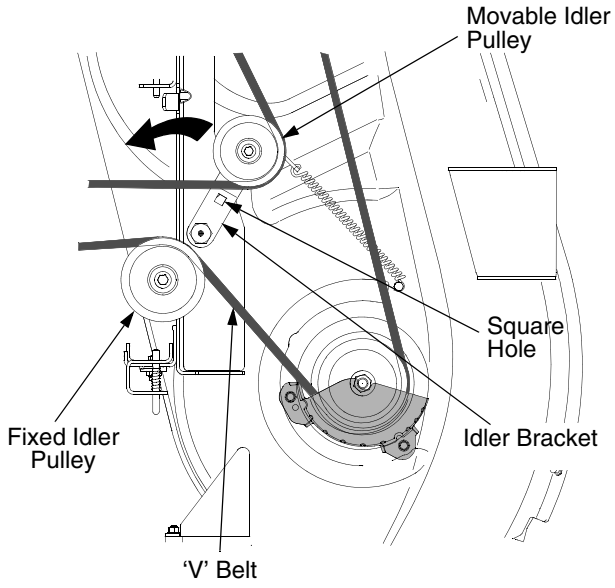


Figure 25

- From beneath the rear of the tractor, slide the belt off of the PTO pulley on the bottom of the engine.
- Looking at the cutting deck from the right side of the tractor, locate the deck support pin on the rear right side of the deck. See Figure 26.
- Pull the deck support pin outward to release the right side of the deck from the deck lift arm. See Figure 26.

42 INCH DECK SHOWN

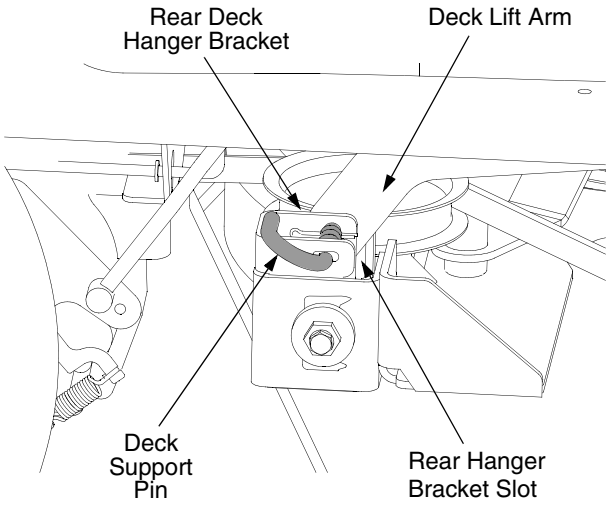


Figure 26

- From the left side of the tractor release the left side of the deck by pulling the left deck support pin outward.
- Raise the deck lift arms out of the rear hanger bracket slots by raising the deck lift handle on the tractor to its highest position.
- Slide the deck forward so that the deck front hanger rod can be lifted out of the two slots of the front deck bracket. After lifting the front hanger rod out of the slots, slide the deck rearward so that the rod can no longer engage the slots.
- Using care to prevent the front hanger rod from falling back into the deck slots, gently slide the cutting deck (from the right side) out from underneath the tractor.

DECK INSTALLATION

To install the mower deck, proceed as follows:

- While holding up the deck front hanger rod, carefully slide the deck underneath the right side of the tractor.
- While still holding the front hanger rod, slide the deck forward until the front hanger rod can be lowered into the slots at the front of the deck.
- Lower the front hanger rod into the slots of the front deck bracket, then slide the deck rearward.
- Maneuver the deck so that the slots in the two rear deck hanger brackets approximately align with the deck lift arms of the tractor. Refer to Figure 26.

- Use the deck lift handle of the tractor to lower the deck lift arms into the slots of the rear deck hanger brackets.
- Pull the deck support pins outward and maneuver the deck as necessary to align the holes in the deck lift arm with the pins. Refer to Figure 26.
- When aligned, push each pin fully inward through the lift arms to secure the arms in the rear hanger bracket slots.
- Route the 'V' belt rearward beneath the tractor frame and install the belt in the pulley of the PTO clutch.
- Route the backside of the belt around the fixed idler pulley of the deck. Refer to Figure 25.
- Insert a 1/2 inch ratchet into the square hole of the deck idler bracket. Refer to Figure 25.
- Using the ratchet for leverage, pivot the idler bracket rearward against the spring tension and slide the backside of the belt onto the movable idler pulley. Refer to Figure 25.

LEVELING THE MOWER DECK

When leveled correctly the mower deck should be level side to side, and should be approximately a 1/8 to 1/4 inch lower in the front of the deck.

Side to Side Leveling

If the cutting deck appears to be mowing unevenly, a side to side adjustment can be performed. Adjust if necessary as follows:

- With the tractor parked on a firm, level surface, place the deck lift handle in the top notch (highest position) and rotate both blades so that they are perpendicular to the tractor frame.
- Measure the distance from the outside left blade tip to the ground and the distance from the outside right blade tip to the ground. The measurements should be equal. If they're not, proceed to the next step.
- Compare the two measurements as follows:
  - Model ZT42—determine whether the right side of the deck must be raised or lowered.
  - Model ZT50—determine whether the left side of the deck must be raised or lowered.
- **ZT42 - 42 Inch Deck ONLY**
  - Loosen, but do not remove, the hex cap screw on the right deck hanger bracket. Refer to Figure 28.
  - Level the deck by using a wrench to turn the adjustment gear (found immediately behind the hex cap screw just loosened) clockwise to lower the right side of the deck, or counterclockwise to raise the right side of the deck. Refer to Figure 28.
  - The deck is properly leveled when both blade tip measurements taken earlier are equal.

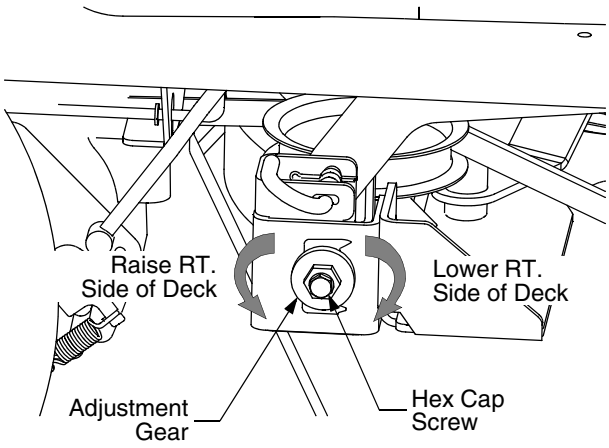


Figure 27

  - Retighten the hex cap screw on the right deck hanger bracket when proper adjustment is achieved.

- **ZT50 - 50 Inch Deck ONLY**
  - Loosen, but do not remove, the hex cap screw on the left deck hanger bracket. Refer to Figure 28.
  - Level the deck by using a wrench to turn the adjustment gear (found immediately behind the hex cap screw just loosened) clockwise to raise the left side of the deck, or counterclockwise to lower the left side of the deck.

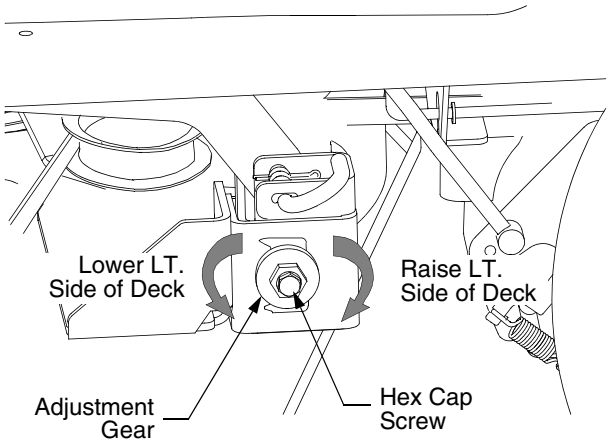


Figure 28

  - The deck is properly leveled when both blade tip measurements taken earlier are equal.
  - Retighten the hex cap screw on the left deck hanger bracket when proper adjustment is achieved.

Front to Back Leveling.

The front of the deck should be approximately 1/8 to 1/4 inch lower than the rear of the deck. Adjust if necessary as follows:

- With the deck raised off of the ground, rotate the blades so that they are parallel to the frame of the tractor.
- If the side to side leveling was done correctly, measuring just the right blade should be acceptable to attain the correct back to front pitch of the deck.
- Measure the distance from the front tip of the blade to the ground and the distance from the rear tip to the ground. The front distance should be 1/8 to 1/4 inch less than the rear. If it is not, proceed to the next step.
- From the front of the tractor, on the rearward side of the front hanger rod bracket, locate the two hex jam nuts on the deck front hanger rod. See Figure 29.

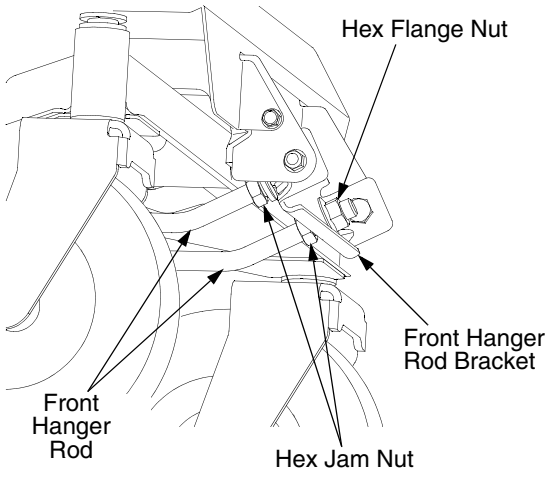


Figure 29

- Loosen the two hex jam nuts and turn them away from the backside of the front hanger rod bracket.
- If the front of the deck was too low, turn the hex flange nuts on the ends of the front hanger rod clockwise to raise the front of the deck. See Figure 29.
- If the front of the deck was too high, turn the hex flange nuts counterclockwise to lower the front of the deck.

IMPORTANT: ***The deck front hanger rod should be at the front of the slots of the front deck bracket. If one side of the rod is not at the front of its slot, turn the hex flange nut on the that side until rod just touches the front of the slot. Then re-measure and re-adjust the front hanger rod as necessary.***

- When the correct pitch of the deck is acquired, tighten the hex jam nuts against the front hanger rod bracket.

ADJUSTING THE GAUGE WHEELS

The cutting height of the mower deck can be set in any of six height settings using the deck lift handle of the tractor. The deck heights range from 1-1/2 inches to 4 inches. The deck gauge wheel position should be approximately 1/4 to 1/2 inch above the ground when the deck is set in the desired height setting.

WARNING: Keep hands and feet away from the discharge opening of the cutting deck.

NOTE: The deck gauge wheels are an anti-scalp feature of the deck and are not designed to support the weight of the cutting deck.

Using the lift handle, set the deck in the desired height setting, then check the gauge wheel and if necessary adjust as follows.

- With the deck set at the desired height, visually check the distance between the gauge wheels and the ground. If the gauge wheels are near or touching the ground, they should be raised. If the gauge wheels are too high, they should be lowered.
- Remove the lock nut securing one of the gauge wheel shoulder screws to the deck. Remove the gauge wheel and shoulder screw. See Figure 30.

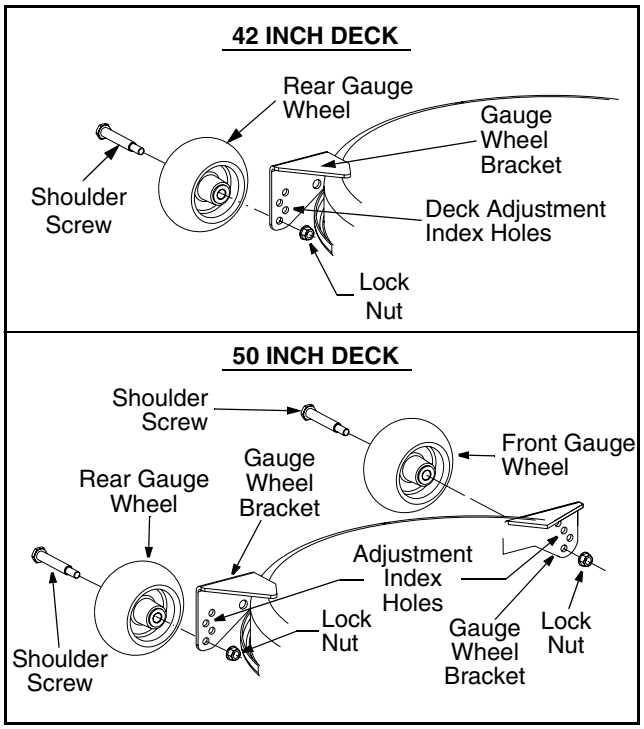


Figure 30

- Insert the shoulder screw in the one of four index holes that will give the gauge wheel a 1/4 to 1/2 inch clearance with the ground.
- Note the index hole of the just adjusted wheel, and adjust the other gauge wheels into the respective index holes on the other gauge wheel brackets on the deck.

DECK MAINTENANCE

Cleaning And Blade Care

WARNING: Before performing any maintenance, place the PTO switch in the "OFF" position, engage the parking brake lever, turn the ignition key to the "OFF" position and remove the key from the switch. When servicing the mower deck, be careful not to cut yourself on the sharpened blades.

Clean the underside of the mower deck at the end of the mowing season or when buildup of cut material on the underside is noticed.

Once a month remove the belt covers to remove any accumulation of grass clippings from around the spindle pulleys and V-belt. Clean more often when mowing tall, dry grass.

The cutting blades must be kept sharp at all times. Sharpen the cutting edges of the blades evenly so that the blades remain balanced and the same angle of sharpness is maintained. If the cutting edge of a blade has been sharpened to within 5/8 inch of the wind wing radius, it is recommended that new blades be installed. See Figure 31.

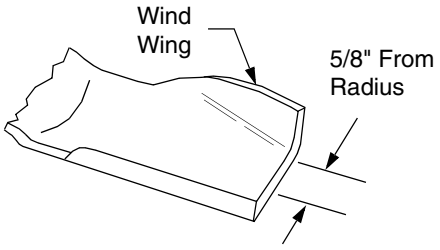


Figure 31

The blades may be removed as follows.

- Remove the deck from beneath the tractor, (refer to **Deck Removal** on page 26) then gently flip the deck over to expose its underside.
- Use a 15/16 inch wrench to hold the hex nut on top of the spindle assembly when loosening the hex nut securing the blade. A block of wood may be placed between the deck housing and the cutting edge of the blade to assist in removal of the hex nut securing the blade. Refer to Figure 32.
- When reinstalling the blades, be sure they are installed so that the wind wings are pointing upward toward the top of the deck.
- Reinstall the deck (refer to **Deck Installation** on page 26).

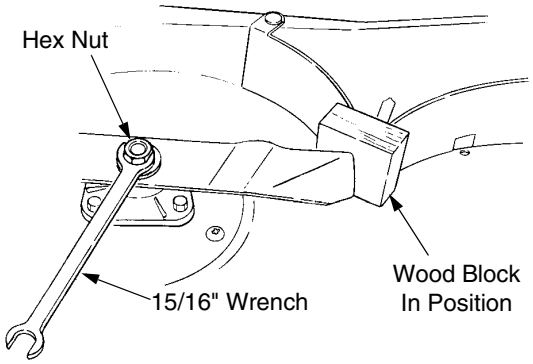


Figure 32

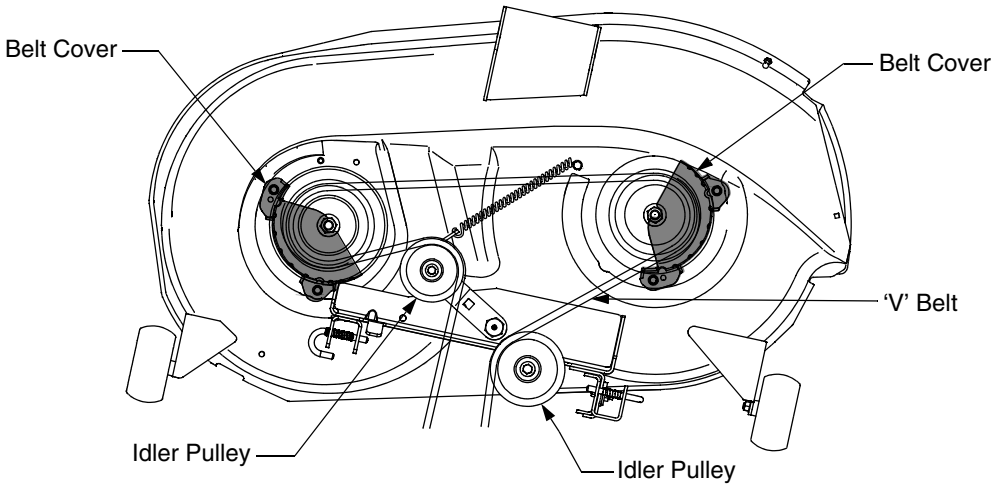
DECK LUBRICATION

- After every 10 hours of operation and/or before putting the deck into winter storage, lubricate the spindle assemblies with a No. 2 multipurpose lithium grease. The lube fittings are located in the spindle housing and can be accessed from underneath the deck.
- After every 10 hours of operation and/or before putting the deck into winter storage, lubricate the spindle belt idler bracket with a No. 2 multipurpose lithium grease. The lube fitting is located in the top of the shoulder bolt securing the idler bracket.
- After every 25 hours of operation and/or before putting the deck into winter storage, lubricate the deck gauge wheels with a No. 2 multipurpose lithium grease.

REPLACING THE DECK DRIVE BELT

- Remove the deck from beneath the tractor, (refer to **Deck Removal** on page 26).
- Remove the hex tapping screws securing the belt covers to the deck and remove the belt from the spindle pulleys. Refer to Figure 33.
- Depending on which deck (42" or 50") you are working on, install the new belt around the spindle pulleys as shown in the applicable graphic of Figure 33. Reinstall the belt covers.
- Route the belt rearward between the two idler pulleys and reinstall the deck following the instructions in **Deck Installation** on page 26.

42 INCH MOWER DECK



50 INCH MOWER DECK

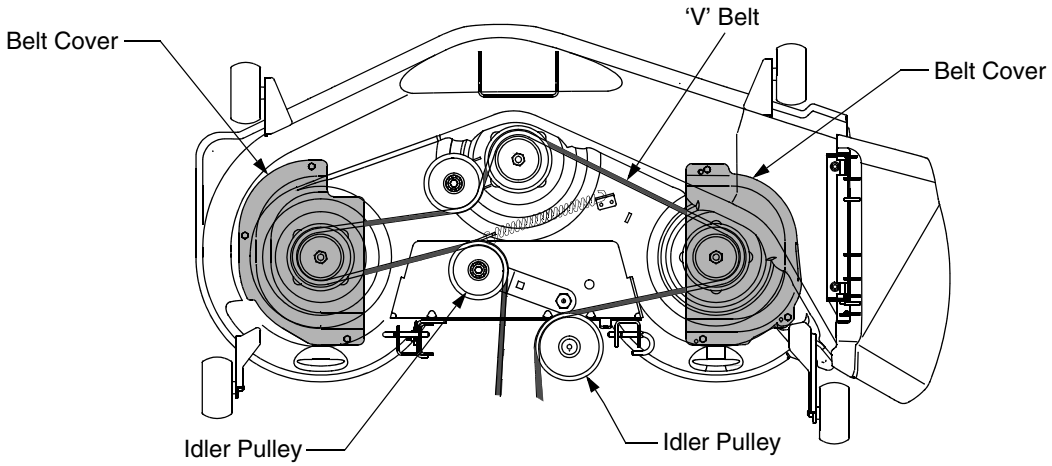
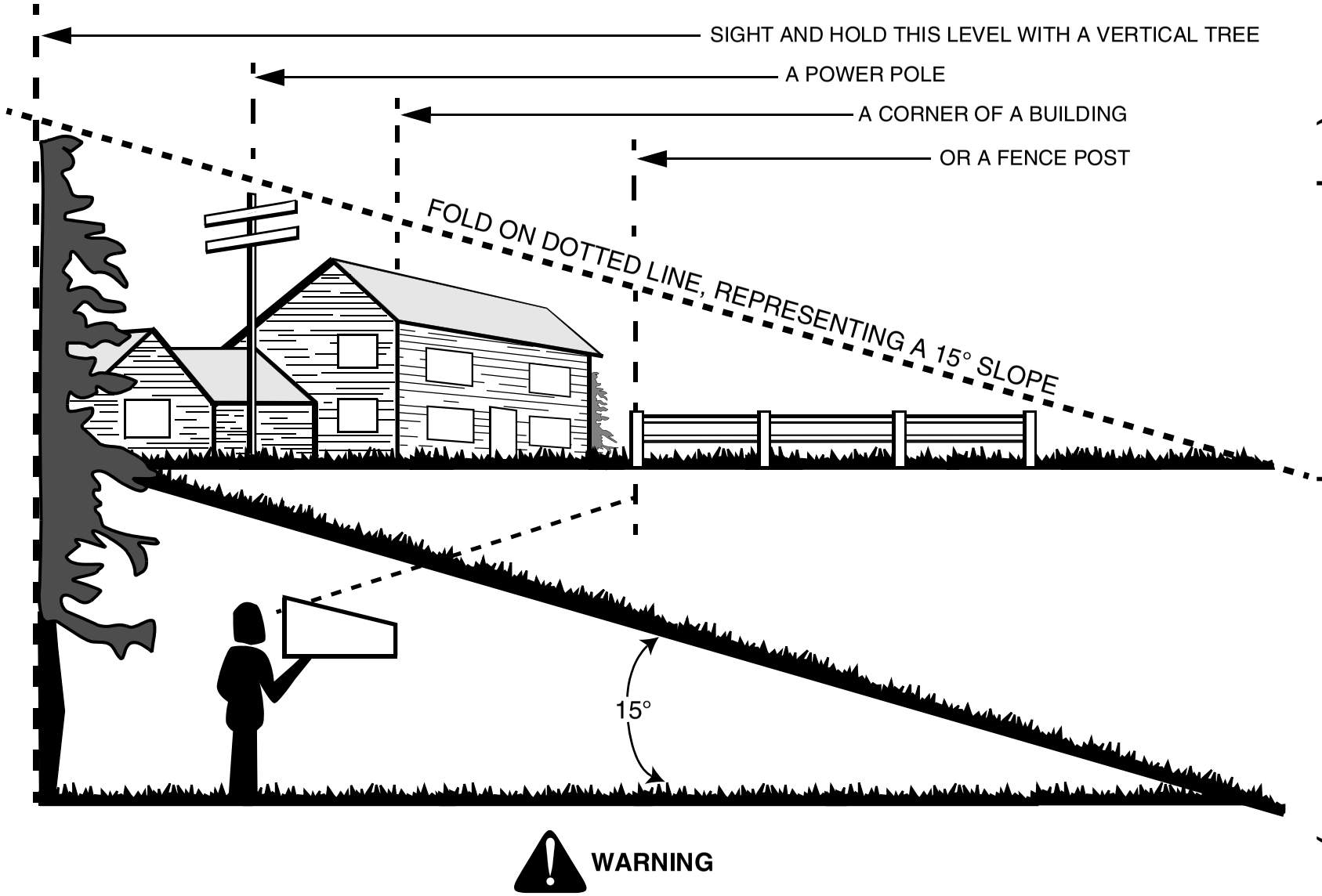


Figure 33

USE THIS PAGE AS A GUIDE TO DETERMINE SLOPES WHERE YOU MAY NOT OPERATE SAFELY.

SLOPE GAUGE

(Keep this sheet in a safe place for future reference.)


SIGHT AND HOLD THIS LEVEL WITH A VERTICAL TREE
A POWER POLE
A CORNER OF A BUILDING
OR A FENCE POST
FOLD ON DOTTED LINE, REPRESENTING A 15° SLOPE
15°

WARNING

Do not mow on inclines with a slope in excess of 15 degrees (a rise of approximately 2-1/2 feet every 10 feet). A riding mower could overturn and cause serious injury. If operating a walk-behind mower on such a slope, it is extremely difficult to maintain your footing and you could slip, resulting in serious injury.
Operate RIDING mowers up and down slopes, never across the face of slopes.
Operate WALK-BEHIND mowers across the face of slopes, never up and down slopes.

NOTES

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